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GLEANINGS IN BEE CULTURE

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Honey Market.

GRADING-RULES.

FANCY.—All sections to be well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel stain or otherwise; all the cells sealed except an occasional cell, the outside surface of the wood well scraped of propolis.

A No. 1. All sections to be filled except the row of cells next to the wood, combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

CHICAGO.—The supply of comb honey is large, and sales are being forced, so that it is a little difficult to give accurate figures. Sales are not easily made of fancy at any thing over 13, with less desirable grades selling lower. Extracted white brings 6@7½, according to kind, flavor, and package; amber, 5½@6½. Beeswax, 28@30.

R. A. BURNETT & CO.

Nov. 9. 199 South Water St., Chicago, Ill.

CINCINNATI.—The demand for honey is a little better. The prices rule about the same. Extracted is sold as follows: Amber in barrels, 5½@5¾; in cans, about one half more; water-white alfalfa, 6@6½; white-clover, 6¼@7½. The comb honey market is quite lively, and sells as follows: Fancy water-white, 14@15; Beeswax in good demand, and I will now pay 30 cts delivered here. C. H. W. WEBER.

Nov. 7. 2140 Central Ave., Cincinnati, Ohio.

SCHENECTADY.—Receipts of both comb and extracted have been unusually large the past ten days, and buyers have already purchased freely. Stock is accumulating, and prices are not so firm, although we do not change our quotations. Fancy white, 16; No. 1, 15; No. 2, 13@14. Buckwheat, 12@13; extracted, light, 6½@7½; dark, 6@6½.

CHAS. MCCULLOCH,

Schenectady, N. Y.

BOSTON.—Owing to the large amount of honey coming in, prices are softening a little. Fancy white we quote at 16@17; A. No. 1, 15½; No. 1, 15. Practically no No. 2 in the market. Extracted, 6 to 8.

BLAKE, SCOTT & LEE,

Boston, Mass.

Nov. 6.

TORONTO.—Prices on honey here remain about the same; a little more demand, especially for good comb honey; apparently not a great deal of extracted honey changing hands at present. Comb honey in sections, per dozen, \$1.40 to \$1.75, according to quality. Extracted, best quality of white clover and basswood, 6½@8 c.; darker grades and mixed, 5@6, wholesale. Comb honey retails from 15@25c, according to quality. Extracted, best quality in 5 and 10 lb. cans, retails at 9@10c per lb.; darker at 8.

Nov. 11 E. GRAINGER & Co., Toronto, Ont.

BUFFALO.—Pure white comb honey is in very good demand, if put up clean and nice. White clover honey, with travel-stained frames, or the comba little yellow, does not sell very well. Fancy white comb, 14@15; A No. 1, white comb, 13½@14; No. 1, white comb, 12½@13; No. 2, white comb, 11½@12; No. 3, white comb, 11½. Buckwheat, white comb, 1½@12; white extracted, 6@7; dark extracted, 5½@6. Beeswax, 28@30.

W. C. TOWNSEND,

Buffalo, N. Y.

Oct. 27.

MILWAUKEE.—This market has proved very good so far this season for honey, and the sales have been larger than usual up to this date for new crop; but the demand has been more for extracted, and comb has been neglected. But it is confidently expected that, as cool weather prevails, comb honey will take the lead. Prices are steady, although a little more in favor of the buyer as stocks increase. We quote fancy 1½-lb. sections, 14@15; A No. 1, 1 lb. sections, 13@14; extracted, in barrels or cans, white, 6½@7½; dark amber, 6½@7. Beeswax, 28@30.

A. V. BISHOP & CO.

Oct. 28.

110 Buffalo St., Milwaukee, Wis.

TOLEDO.—The demand for comb honey the past few days has been good, and prices are as follows: Fancy white-clover comb brings, in a retail way 16; A No. 1 white-clover, 15. No demand for dark. Extracted, in barrels, white-clover, 7½; extracted, in cans, white-clover, 8½; amber, in barrels, 6¾. Beeswax, 26@28.

GRIGGS BROTHERS,
214 Jackson Ave., Toledo, O.

Nov. 7.

PHILADELPHIA.—Honey arriving quite freely. We are now in the height of the honey season, and there is a big demand, but it does not last long. We are getting fancy prices for fancy comb; 17c for fancy white; 15c for No. 1; 13c for amber and buckwheat. Extracted in fair demand; 7c for white; 6 for amber. Beeswax in good demand; 32c for bright yellow. We are producers of honey and do not handle on commission.

WM. A. SELSER.

Nov. 11.

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ENIL J. BAXTER,

Nauvoo, Hancock Co., Ill.

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OREL L. HERSHISER,

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R. & E. C. PORTER, Lewistown, Ill.

FOR SALE.—Extracted choice ripe clover honey in cases of two 60-lb. cans each, at 8 cts. per lb.; 335-lb. bbls. at 7½ cts. per lb.

G. W. WILSON, R. F. D. No. 1, Viola, Wis.

FOR SALE.—Extracted honey, amber, 5½ up; light 7 up. Several size packages. Samples, 10 cts.

I. J. STRINGHAM, 105 Park Place, New York.

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HILDRETH & SEGELKEN,

265-267 Greenwich St., New York.

WANTED.—Extracted honey. Mail sample and lowest price; also fancy and No. 1 comb honey; must be in no-drip shipping-cases. We pay cash.

CHAS KOEPPEX, Fredericksburg, Va.

WANTED.—Comb and extracted honey. State price, kind, and quantity.

R. A. BURNETT & CO.,

199 South Water St., Chicago, Ill.

WANTED.—Honey. Selling fancy white, 15c; amber, 18c. We are in the market for either local or car lots of comb honey. Write us.

EVANS & TURNER,

Columbus, Ohio.

WANTED.—Comb honey. We have an unlimited demand for it at the right price. Address, giving quantity, what gathered from, and lowest cash price at your depot. State also how packed.

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Have your goods on hand ready for use.

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**GLEANINGS IN
BEE CULTURE**

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS.

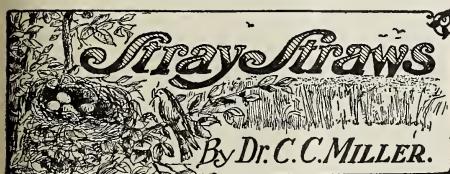
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NOV. 15, 1903.

No. 22



WHAT A WARM FALL we're having! Here it is Nov. 2, and more like summer than fall—bright sunshine, balmy air, and bees flying gayly. [The same here.—ED.]

I ALWAYS THOUGHT A. I. Root was a kind-hearted parent; but it doesn't look altogether like it when he tells us, p. 932, how he coolly abandoned that guileless youth, Huber, just at a most critical time.

OF ALL PLANS offered for automatic hiving, it's just possible that the one suggested by G. W. Strangways, p. 929, is as good as any. Set the hive up where a clipped queen wouldn't easily get back into it, and in a good many cases she and the swarm would find their way into a hive sitting on the ground.

A. I. Root may be interested to know that, when at the Kane Co. Sunday-school convention, Oct. 27, 28, I spent the night with his friend, S. W. Pike, the florist, St. Charles, and I concluded there were some nice folks outside the ranks of bee-keepers. But it was hardly the best thing for me; for when I saw the wee plants he was starting from cuttings it made me hanker after the same business.

MR. DOOLITTLE, p. 914, speaks of putting dummies in ten-frame hives when sections are given. It should be added that, if the supers cover the whole of the hive, bees will not do the best work in the sections over the dummies. Possibly this might be obviated by mixing the dummies among the brood-frames. That might seem a bad thing, and possibly it is; and yet after trying it in a few cases I could not see that a dummy in the brood-nest did any harm during the harvest. Of course, it would be a very bad thing at other times.

YE EDITOR says he isn't a candidate for re-election as director, but I tried that sort of thing once and it didn't work—they elected me "aliee samee." I suspect it will work the same way now; at any rate, I'll vote for E. R. Root as one of the directors at the coming election, with the expectation that I'll not be alone in my action. Just because a man is big enough to be an editor is no reason he should be too lazy to do his share in other things. [I would not object to the work if I did not think it was about time for some other fellow with more time and ability than I to step into my place. But I am not a candidate, and request my friends to support Mr. William McEvoy.—ED.]

NO, MR. EDITOR, I didn't misunderstand you about the ball of bees found on the ground with a swarming clipped queen, p. 912. Of the hundreds of cases we have had of swarms with clipped queens—perhaps thousands—in not one in twenty did we find the queen with a cluster of her own bees with her. I don't say about other places, but I know how it is here. Possibly our hives sitting close to the ground may have something to do with it. Unless we are promptly on hand while the swarm is issuing we may not see the queen at all, for she quickly returns to the hive; and if she doesn't return to the hive, she seems to disappear in some way, rarely being found with an admiring cohort. [You may be nearer right than I; but I distinctly remember that, when I was working among the bees, the first thing I looked for when hunting for a clipped queen was a ball of bees. Your hives are arranged in pairs. If a clipped queen does not go back into one, she may into another, whether she belongs there or not; and I suspect that, in the generality of cases, with your conditions, she goes into one or the other before you happen around.—ED.]

"WHILE IT WOULD be too much to claim that this kind of hay can not be grown without bees, yet it is safe to say that a much poorer crop would be the result without them." So ye editor, p. 917. Now, those

anti-bee fellows will make capital of that, and say you are claiming that bees aid the growth of the green leaves. Of course, you mean that a crop of *seed* can not be grown so well without bees, and thus the hay crop will be indirectly injured; but the presence or absence of bees can have nothing whatever to do with the growth of the hay itself. [Technically speaking, your point is well taken; but in the aggregate, taking one season with another, my statement is correct. Without good seed—seed that will germinate—the plants will be scattered here and there, a good many missing, and the field will be correspondingly poor for many years to come, or so long as the old roots are allowed to grow hay.—ED.]

"AUTOMATIC SELF-HIVING" is a heading, presumably the editor's, p. 929. Now, Mr. Editor, please tell us what kind of self-hiving you could have that wasn't automatic, or what kind of automatic hiving you could have that wasn't self-hiving. Next time you overload an item with that kind of a heading, please cross out part of it in the copy mailed to me. I wouldn't have said any thing about it if you hadn't stabbed me in my "eagle eye," page 927. [Yes, surely that was a slip. Self-hiving and automatic hiving mean the same thing, and are, therefore, an unnecessary repetition of words. Oh how I wish that you were editor of a bee-paper! Was it not Job who said, "Oh that mine adversary had written a book!"? Some day, when I am laid up, and get so old I can not do any more journal work, I will call on a young friend like you to take my place, and then won't I "rub it in"? Our proof-reader, however, says he is very sure I wrote it "automatic or self-hiving." He is the stenographer who took down my dictation, and ought to know. We both of us in the proof-reading missed the error. But, say; once in a while we catch a slip in your copy, and fix it.—ED.]

QUOTATIONS of the Chicago market, page 907, show that a case of sections weighing 16 oz. each will bring no more than a case of those weighing 15 oz. each, if as much. It is hardly possible that a consumer would prefer a 15-oz. section to one weighing 16 oz. Isn't there something a little rotten about the Chicago grocery trade? [Not if the public has lost or is losing sight of an even pound package. I have contended for some time that consumers, when they pay 15 or 16 cents, pay that amount for a *cake* or *box* of honey, and not for a *pound* of it—nothing rotten, nothing wrong about this whole business if this is the case. Then how much more convenient for the retailer to sell a cake of honey for an even figure at even change without weighing and figuring up the price! If 15 ounces of honey are worth 18 cents (whatever the retail price may be), what is the harm of selling it for 18 cents? The scheme of selling honey by the piece is coming more and more into vogue. There is no more objection to sell-

ing honey that way than to sell eggs by the dozen. Leghorn eggs will bring just as much in the market as any of the larger eggs of Asiatic fowls; and as long as *they* are not rotten there is nothing rotten in the transaction. Well-graded honey averages about the same weight per box in a case. We will say one box weighs 14, one 14½, and another one 15 ounces. The customer can have his choice out of any of the boxes if there is a choice; but as a rule he will take whatever is given him, without any questions. Here is some poor dark honey. It brings a less price per box; but it will all average up about the same. Is there any thing rotten in that kind of business? To my way of thinking, there is not. You possibly assume that the growing tendency for selling honey by the piece is based on deception to the consumer—making him think he is getting 16 ounces when he is getting only 15 for his money. In this I think you are wrong. The practice has come about because of closer grading and the convenience of the system—no waiting; no weighing; no figuring, and no mistakes. Why, don't you know that now there is less and less of buying of groceries by weight? Neat pretty packages of food stuffs already put up, ready to hand out to the customer without wrapping, are becoming more and more popular. If you buy a package of Pettijohn's or of Force you don't know the weight, and don't ask. If you are charged too much, a competing manufacturer will cut the price. Well, why shouldn't comb honey follow the general trend of custom?—ED.]

YE EDITOR, p. 927, thinks he has the joke on me because my "eagle eye" didn't discover his slip in arithmetic. Must have been that I shut my "eagle eye" and looked at his "sum" with the other eye. Now that I've got both eyes upon it, Mr. Editor, I must say that both you and Mr. Clarke are a little off when you say that a bee-keeper whose honey nets him 10 cents a pound loses money if he doesn't get 10 cents a pound for sections that cost him more than that. Why don't you say that he loses money if he doesn't get back any thing for the can in which he ships extracted honey? [But Mr. Clarke and I were talking about the question whether sections at \$10 a thousand could be sold, when honey nets 10 cts. per lb., so that the purchaser of the sections in selling to the purchaser of the honey would lose no money on the sections when they were sold again. I originally advanced the proposition that one could pay even as high as \$10 a thousand for his sections; and at a net price of 10 cts. for honey and the section, he would get back his money on the section. In this I was mistaken. But it is true, as you partly suggest, that a bee-beeper could afford to pay \$10 a thousand for his sections, and he would be paying no more for his package, if as much, as the extracted-honey man who puts up his honey in glass and tin for re-

tail purposes. If we look at the problem from this point of view, he could afford to pay \$10 a thousand if the extracted-honey man can afford to buy small glass packages, and give them away to those who buy his honey. The comb-honey producer can not weigh in his shipping-cases with his honey at so much per pound. No, he must pay out good money for them, and then *give them away* if he ships out of town. But his sections he sells again by weight at the price he gets for his honey; and when he pays at the rate of \$5.00 per thousand for them he is pretty sure of getting that \$5.00 back again. But, fortunately, the large producer does not yet have to pay this figure. He can buy for less, and make a little profit in the wood of the section when he sells.—ED.]

"**THERE IS NO** advantage in opening a hive oftener than two or three times a season if you desire to get honey," p. 931. Well, yes—er—that is, if you're following a plan that doesn't require opening a hive oftener than two or three times a season. I've just been looking at my book to see how often were opened the five hives from which the largest harvests came. I don't dare tell how often it was, but it was more than two or three times, and I desired to get honey, too, and wasn't opening them just for the fun of it. [This is a question that hinges very largely on management, the man, and the season. You will remember the *Review* for March mentioned Mr. E. D. Townsend, of Michigan, who has for years secured good crops of honey from an out-yard by visiting the bees only four times in a whole year. And was it not Mr. Hutchinson, Mr. Heddon, Mr. Coggshall, and several others who made the statement that too much opening of the brood-nest is a waste of labor? At our outyards there are some comb-honey hives that are opened only two or three times a season. When I say the *season*, I mean from spring to fall. But you had a remarkably large yield of honey this last season, and I should imagine it would pay you well to open some colonies oftener than three or four times; and when I say *opening* I do not mean putting on supers and taking off honey.—ED.]

view of the situation I have yet seen; and it shows no little labor on the part of the writer to collect so much information in a small compass.



Dr. Miller writes concerning what I said about the pronunciation of the word *propolis*, saying that good authority authorizes *prop-olis* as well as *pro-polis*. That's true; but as the greater part of our authorities seem to favor *pro-polis* rather than *propolis*, we have always used the former way here. The English writer quoted says it would be a pity to lose sight of the original meaning of the word — *pro*, in front of, and *polis*, a city, by calling it any thing but *propolis*. The matter is comparatively unimportant, but I add this explanation simply to *prop up* my *pro*. Dr. Miller is always a safe guide, and I thank him for his suggestions.



The sight of any thing from Ireland always arouses my interest, especially if it is something new. Well, the newest thing I have seen from there lately is a new bee-journal, *Bee-keeper of Ireland*. The pages are the same size as this, 16 in number, and well filled with matter of a very interesting nature. We have here only the July number, which was the second one issued. I don't see how an American can fail to be interested in the following, as it gives in fine form an Irishman's idea of his own country as well as of this:

If Ireland does not "buck up" in the bee business before long, some American will come over and "exploit" the Emerald Isle in the production of honey and beeswax. It is absolutely disgraceful that in a country so near London, the principal market of the world, in a country with a flora probably unequaled in the temperate zones, there are not three apiaries of over 100 hives, and that Ireland markets a miserable 100,000 lbs. of honey per annum. The poverty-stricken inhabitants eat the other 600,000 lbs. produced. If there be not soon a rustle among the dry bones, the aforesaid American, when he comes, will make his "pile." He will turn out from each of his "stations" nearly as much honey as is now obtained from the whole country. Ireland is, without question, able to support 200,000 stocks capable of yielding 200 lbs. each, or 40,000,000 lbs., and until it turns out that quantity the business will not be attended to properly. At 6d. per lb. (the price of sections in America, with its hundreds of tons of production has never fallen so low as six-pence, but take it at that) there is nectar worth a million of money going to waste. The peddling arrangement of keeping a hive or two must give the palm to commercial apiaries of 100 or 200 hives at regular intervals all over the country. Those who are first in the field will get the market connection, which is always a valuable asset.

There is no finer honey in the world than is produced in Ireland. The writer, as judge at the Royal Dublin Society's and other shows, has frequently found almost every specimen exhibited to be entitled to full marks, and has been compelled to apply tests not contemplated by ordinary judging standards to secure differentiation.

On consideration, the above remark about "some American" must be withdrawn. It is not one American we shall have. They will come in shoals. A million of money will stand a great deal of carving, and many an American will be content with a fraction of the amount. Ireland is the most paradoxical country on the surface of the globe. In one part of Dublin one must speak German to be understood; in another, Italian; and in another, the language of the Baillie Nicol Jarvie; yet, as regularly as the spring returns, thousands of natives go to America, where they earn three times as much money doing ten times as much work. We say to these emigrants—stay at home and keep bees.

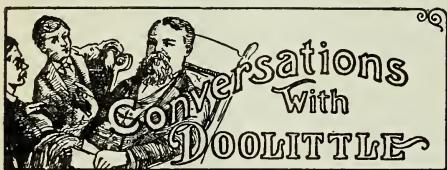


Our Spanish exchange, *El Colmenero Espanol*, is publishing a series of accounts of the present condition of apiculture in the principal nations of the world. In our next issue it is my intention to give a translation of these, as it is the best birdseye

AMERICAN BEE-KEEPER.

A writer maintains that the rise of two opposing factions in an organization like the National tends to a greater degree of strength and purity, just as in national politics we have a higher degree of purity by having two political parties, one to look after the other. Mr. Hill shows up this fallacy as follows:

With all due respect to Mr. H., we desire to emphasize the assertion that, in regard to his observations relative to the opposing factions which were formerly at work in the National, he is off his base. Legitimate competition of independent and well-organized institutions, whether for industrial, commercial, or political purposes, is one thing; but internal ruptures, breeding discord and strife, curtail its influence for good.



UNIFORMITY IN HIVES, ETC.

"Mr. Doolittle?"

"Yes. That's my name."

"I want to talk with you a little while on several matters. Have you time to do this now?"

"I am a little busy this morning, but that will not hinder, as I am always busy. What is it you wish to know, Mr. Jones?"

"I am about to make some new hives. Is there any advantage in both upper and lower story being just alike, so they can be used together or separately?"

"There are many advantages in having all hives in use of the same size, and several in having both stories just alike. Some of them are as follows: In making you can do the same much faster, and with less bother; you can use the upper story for the same purpose you do the lower, at any time you desire, which will be very often, I assure you; and then, one, two, three, or more will fit together like clockwork in tiering up, without any outside shell whatever to cover them."

"Yes, I see. But what about the entrance? How can that be arranged?"

"By making the entrance in the bottom-board, where it should always be. Thus, this part need not affect the hive at all. If made there, you will never have any bother from this entrance when changing hives, reversing them, changing the front for the rear, or any such thing; and I am sure, after once having hives without any entrance cut in them, you will never go back to the old plan of entrances in the hive again."

"That seems quite simple now you mention it; but I had not thought but that I was obliged to have the entrance cut in the hives as did our fathers. But we must not tarry too long on any one thing lest I weary you with the many questions I wish to ask

on different subjects. I must have frames for my hives. Would you advise me to buy wired frames by the hundred, filled with foundation?"

"That depends upon conditions."

"What are those conditions?"

"If you expect to work your apiary for extracted honey it might be the better plan; and even if you work it for comb honey, and have not the time to look after the combs properly, while they are being built, or if your time is very valuable, it may be the better way to buy as you suggest."

"What are the conditions under which you would not think it advisable to buy?"

"With the average bee-keeper, who has some time at his or her command, I think it will pay fully as well, especially where the sections are filled with thin foundation, to use only starters of comb or comb foundation in the brood-frames, say from $\frac{1}{4}$ inch to an inch wide, as it will to fill the frames full of the same, to say nothing about the saving of money and time. It is the opinion of several of the best bee keepers of to-day, that as much or more comb honey can be secured by allowing the bees to build their comb in the brood-frames, using starters as I have spoken of, than by any other mode of procedure."

"I suppose this would give me nice comb honey too?"

"Certainly. Comb honey of the most fancy make can be produced in this way, and the difference in selling price between this and that built by a colony having old black comb below, where much of the old wax is worked into the capping of the section honey, is an item worth looking after. But, so far as I can see, just as nice honey comes from a colony having frames filled with foundation as does from frames having only starters, so this fancy section honey has no claims against frames filled with foundation."

"I thank you for this explanation. Now I should like your experience regarding the wintering qualities of the Italian bee as compared with the German. Can the former stand the cold winters we have in 43° north latitude as well as the latter?"

"It is said by some that they do not; and I used to believe that the black or German bee was the hardier; but that was before I made any careful test in the matter. Some 25 years ago I began to look carefully into the matter of wintering; and during the experience of all these years since, I have become convinced that there is little if any difference in favor of either along this line. Some winters the blacks seem to do the better; in others, the Italians come out ahead."

"Now I wish to thank you again, and will come to the main item which brought me over to see you. A neighbor has given me some bees in box hives, because he thinks they have not stores enough to winter on. How can I feed these bees?"

"This could have been very easily done a month ago, and perhaps now, should

there come a warm spell, or our usual 'Indian summer,' by boring a hole in the top of the hive, if there is none already there, and placing a feeder on top, covering all with a hood, box, half-bushel, or something of that kind."

"What shall I use for this feeder? I have none."

"If you do not have a feeder, a suitable-sized tin basin or pan will answer every purpose for such feeding. After having the feed in the pan, pull up some rather short grass and scatter it over the top of the feed for a float, to keep the bees from drowning, and set up a piece of section material in such a way that the bees can climb on it over to the feed. Above all, be sure that all cracks under and about your cover are bee-tight, otherwise you may have a bad time with robber bees, especially should it come off quite warm."

"Can I not put off feeding till winter just us well?"

"No!—thousand times no! It has been put off already too long. Allow me to impress on your mind, so it will always stay there, that from September 20 to October 5 is quite late enough to feed bees."

"But suppose there come no warm days —what then?"

"If this should happen, and you find the bees are nearly or quite destitute of food when winter sets in, take the box hives to the cellar, turn them bottom side up, and every three or four days sprinkle a few tablespoonsfuls of honey over the bees and combs, having the honey a little more than blood warm."

"Will the size of the colony make any difference?"

"Yes. If any are large colonies, or any seem to require more, use as much as half a teacupful each time, but do not use so much that they will not take it all, as that which runs down in the hive and stays there will sour, and cause the bees not to winter so well."

"What will be the chances if I can not feed them this fall?"

"Bees have been successfully wintered by feeding them while in the cellar in the way I have told you; but the chances are that a loss of feed and bees will be the result. Still, if I were in your place I would try it if no warm spell occurs, as you will gain in experience, even if you lose the bees."

"Would it do to leave them till winter, and then set them in a warm room under netting, to feed?"

"I should prefer not to try it, though you might one or two, if you wished to. From my experience in the past, such a procedure would cause them to become uneasy and to go to breeding, thus consuming large quantities of food, which would in all probability cause diarrhea, resulting in death. There is a chance for such occurring where fed in the cellar, but not as much as in a warm room."

"Well, I must go now. Good day."



Do not fail to read Dr. Kellogg's article in this issue.

THE last issue of the *Bee-keepers' Review* is quite a California number. I have enjoyed reading the editor's impressions of that beautiful country. It is fair, conservative, and truthful. In reading it over I kept saying to myself, "Yes, that is so;" and, strangely enough, I had never taken the pains to tell our own readers, just because I did not think of it. Well, if you want to know about California send to W. Z. Hutchinson, Flint, Mich., for his October number.

DR. J. H. KELLOGG, whose article we take particular pleasure in publishing, says, "Honey is practically cane sugar already digested." When Prof. A. J. Cook made a similar assertion some twenty years ago he was almost persecuted —called a heretic, and was denounced in no mild terms. "Digested nectar," said his opponents, "is unscientific, and unsavory in sound;" but since the years have flown by, there is more and more evidence to show that honey is indeed "digested nectar," or sweet already digested, and hence is more readily assimilated than the cane sugars of commerce.

Dr. Kellogg, of the great Battle Creek Sanitarium, is one of the highest medical authorities in the world, and this statement bears with it great weight. If I mistake not, our physicians all over the country admit that honey is one of the most wholesome sweets that one can eat; and some family physicians have recommended honey in preference to cane sugar for their dyspeptic patients.

FORMALIN ADULTERATED; WHY IT HAS POSSIBLY FAILED.

A LETTER from Prof. F. C. Harrison, of the Ottawa Experiment Station, the one who first brought to the notice of the bee-keeping world the use of formalin gas for the treatment of foul-broody combs and colonies, appears in the September issue of the *Canadian Bee Journal*, in which he says that formalin is a very much adulterated article; that a good deal of the commercial stuff put out for formalin is very weak, and would prove entirely inadequate for disinfecting badly diseased combs if used no stronger than the directions call for when the pure article is used.

This, I have no doubt, will be news to many of our subscribers, and it may account for the partial and complete failures

with this new treatment. If so, we shall have to go a little slow about condemning the new drug, even if we do not put complete confidence in it for the treatment of our diseased combs.

Prof. Harrison says further that even the adulterated drug may be made to answer provided there is a half more of it used. The extra amount necessary will depend, of course, on the degree of adulteration.

WM. M'EVoy FOR DIRECTOR ON THE NATIONAL BOARD.

THE following announcement from Mr. N. E. France will explain itself:

As it will soon be time for National members to vote for officers, and amendments to the constitution, I wish to say to the members that Canada has 60 members, and many more ready to join at their next annual meeting. They have no member on the Board of Directors, but should have. Mr. E. R. Root not being a candidate for re-election, I shall vote for William McEvoy to succeed him. He has done more for Canada than any other member, and this season he settled several cases for us. N. E. FRANCE.

COPY OF POSTAL BALLOT.

MR. G. W. YORK, Chicago:

I hereby cast my vote as follows:

- | | |
|--|---|
| For General Manager..... | (To succeed N. E. France, of Platteville, Wis.) |
| For Director..... | (To succeed R. C. Aikin, of Loveland, Col.) |
| For Director..... | (To succeed P. H. Elwood, of Starkville, N. Y.) |
| For Director..... | (To succeed E. R. Root, of Medina, O.) |
|Amendments to the Constitution
(for or against). | (Name and Address.) |

All votes must be in before January 1, 1904.

I shall be very glad to see Mr. McEvoy elected in my place, as I can not serve, even if elected. He is a very hard worker, and is greatly interested in every thing that pertains to the best interests of bee-dom. He will be a most excellent man on the Board, and I shall be sincerely gratified if he is elected.

JOINT CONVENTION OF THE OHIO STATE AND HAMILTON CO. BEE-KEEPERS' ASS'N.

THE following will be of interest to Ohio bee-keepers:

Last evening we completed arrangements for our meeting on Nov. 25. There will be a business meeting for the joint associations at 2:30 P.M., in the Grand Hotel, and at 7:30 the stereopticon exhibition by Mr. Root will take place. At this meeting we have the promise of attendance of our new representatives, some of whom are bee-keepers. We are sending a circular to every bee-keeper in Hamilton Co., and adjoining counties in Indiana and Kentucky, stating our objects, and requesting their attendance. Some 500 complimentary tickets of admission were inclosed with the circular to make the invitation emphatic and secure a good attendance of bee-keepers, and their families and lady friends. We sent an invitation to N. E. France, and trust he will be with us. W. J. GILLILAND, Sec'y.

Silverton, Ohio, Nov. 10.

CHICAGO-NORTHWESTERN CONVENTION.

THIS will be held in Chicago, Dec. 2 and 3. This is one of the big conventions, and comes the nearest to those of the National of any other held during the year. The following is the announcement put out by the secretary:

The regular annual meeting of the Chicago-Northwestern Bee-keepers' Association will be held in the Revere House club-room, southeast corner of North Clark and Michigan Streets, Dec. 2 and 3. The Revere

House has made a rate of 75 cts. per person per night for lodging, when two occupy a room. Meals 35 cents, or on the American plan at \$2 per day. Owing to the Revere House furnishing free a place for holding our meeting, we feel that all who can do so should patronize them during the convention. Dr. C. C. Miller, W. Z. Hutchinson, E. T. Abbott, N. E. France, J. Q. Smith, J. A. Stone, and Huber H. Root have signified their intention to be present. This will be one of the best conventions ever held in Chicago. It has been suggested that bee-keepers bring with them samples of honey, and such little appliances as they have that are considered handy to work with in the apiary.

G. W. YORK, Pres.

H. F. MOORE, Sec.

ROOFS FOR HIVES; STEEL ROOFS SHORT LIVED.

It is a very difficult matter now to get the old-fashioned iron in roofing-tin, the same as we used to get years ago. Iron made by the old process would last many years longer for roofing than the present steel made by the new process. Indeed, builders and contractors have come to recognize the fact that the new steel roofings, unless galvanized, are very short-lived. The modern method of making the steel seems to take out some elements that protect it from rust. One would naturally suppose that painting this steel, and keeping it painted, would protect it thoroughly, but such is not the case. Some of the modern steel roofs that we put on our buildings rust right under a good coat of paint.

An old contractor said to me the other day that he would never again recommend to his patrons steel roofing, as the asbestos, magnesia, fabric, or gravel-and-tar roofings were far more durable.

And this brings me to the question of tin roofs for hives. Unless the new modern steel is galvanized, it probably will not last as long as ordinary cheap paper; and an intending purchaser had better make his selection from covers made entirely of wood or wood covered with paper, cloth soaked in white lead, or galvanized steel. Do not use tin, if you do not wish to have your roofs rust in a short time.

A very good substitute for tin is muslin soaked in white lead. I saw some excellent covers protected with this material, in Colorado, that had been in use several years, and were good then. The cloth will take up the oil; and if it is painted occasionally it probably will outlast tin a good many times over; and, what is of considerable importance, it is much cheaper.

APICULTURAL REPORT OF THE CENTRAL EXPERIMENTAL FARM, OTTAWA, CAN.; SIZE OF HIVES; SAINFOIN AS A HONEY-PLANT; DO BEES INJURE ORCHARD FRUITS?

WE have before us the apicultural report given by Mr. John Fixter, foreman of the Central Experimental Farm, Canada, at a meeting held in the House of Commons, June 26, 1903. The report details at length various experiments made on the farm. These appear to have been conducted from a strictly practical standpoint; and the end aimed at was, plainly, that of devising methods, and deducing from actual tests conclusions that would be of the greatest import to the average bee-man.

Mr. Fixter gives statistics to show the results of experiments with different sizes of the Heddon and Langstroth hives. The figures given tend to prove that the latter are preferable; and of these the ten-frame size, he says, will be better for the farmer, with whom bee-keeping is but a side issue, and who has only a limited amount of time to devote to it; and the eight-frame size more serviceable in the hands of the competent. Eight colonies were used in making the experiment; and of these, four were in Heddon and four in Langstroth hives.

A report was also given of some experiments made in order to ascertain the best kind of clover for the farmer apiarist to sow—one that would be equally good as fodder, fertilizer, and honey-producer. The one recommended is a species known as sainfoin. Says Mr. Fixter: "It has been generally thought that the little white clover or alsike produced more honey; but I have found that the sainfoin clover gives, I am safe in saying, a greater amount of honey than the white clover will; and it gives also a good amount of fodder per acre. This plant . . . never gets too woody to be used as fodder. . . . When we can get farmers to sow sainfoin as fodder, bee-keeping will have a boom, and will be far more successful."

Some interesting notes were given of the relative amount of water in ripe and unripe honey. Investigation showed that the unsealed contained from 4 to 5 per cent more water than that which was sealed. It was proved, also, that honey kept in a damp cellar absorbs moisture, and ferments. Mr. Fixter was strong in his protest against bee-keepers putting unripe honey upon the market, and rightly declared that it was just as injurious to the honey-trade to do so as it would be to the fruit-trade if fruit-growers were to offer immature fruit to the public.

Perhaps the experiment that will be of most interest to our readers is one made to determine whether bees injure our orchard fruits. The test was made with peaches, pears, plums, grapes, strawberries, and raspberries. The question of "bees and fruit" has been a vexed one for years, as we all know; and a certain class of fruit-growers has been persistent in its denunciations against the honey-bee. The results of Mr. Fixter's experiments have been, like those of all others, fairly made; namely, that bees can not and do not injure good sound fruit, but simply take the juices from those already punctured.

For the observations along this line, four colonies of equal strength were taken; and on each was put a super divided into three compartments. In one of these compartments was put sound fruit; in another one, punctured fruit; and in the third, sound fruit besmeared with honey. The bees began at once to work on the honeyed and punctured specimens, and apparently both were going to be demolished. At the end of six days the hives were examined, and

it was found that the punctured specimens were destroyed; those dipped in honey were thoroughly cleaned but uninjured; and those not treated were in sound condition. Fruit dealt with in a similar way was also hung about the apiary; but in every instance the bees were unable to feed on them. More weight is added to the results of these experiments from the fact that they were made during the summer when no honey was coming in from natural sources. Some of the colonies were even depleted of their stores in order to make the tests thorough; but many of the bees died of actual starvation while luscious fruit lay appetizingly around. That thin covering provided by nature formed an impenetrable barrier between them and the coveted sweetness—"so near and yet so far."

House apiaries were recommended for those living in cities or other places where a good plot of ground could not be obtained. The colonies kept in the same were said to do better during severe weather than those in the yard, as they were greatly protected from the inclemency.

ANOTHER BEE-SUIT; NEGLIGENCE OF BEE-KEEPERS.

SOMEWHOW over a year ago a valuable pair of mules were stung near Millsboro, Delaware, so seriously that they died. The bees that did the stinging were inside the village and the mules were driven along the common highway within a comparatively few feet of the bees. The owner of the mules has sued the bee-keeper for \$500.00 damages, alleging that their owner had no right to keep them so near the common highway. A lawyer has been working up evidence, and it is possible there will be some interesting developments later. A bee-keeper (not the one whose bees did the damage) who has written us in regard to the matter thinks that his neighbor should pay at least one-half of the loss of the mules.

The lesson in this case is that bees within corporated limits should not be kept up close to the general highway without at least a high board fence, shrubbery, or something that would cause the bees to fly high in the air. Our bees are located within 100 feet of the highway but a row of thickly matted evergreens with an average height of 50 ft. causes the bees to fly high as they pass over the road before they can get to their hives. The result has been that we have never had any trouble with the bees attacking horses along the way. But whether the bee-keeper in question were a member or not, it is my impression that, when he himself is negligent, either from letting the bees get to robbing or because he has had them too close to the highway and has failed in some way to raise the flight of his bees above the common highway, the Association would advise him to settle on the best terms possible. Where the bee-keeper is *plainly negligent*, the Association, as I understand it, does not attempt to defend him.



"IMPROVED QUEEN-REARING."

A Review of Mr. Alley's New Bee-book.

BY GEO. W. PHILLIPS.

In reviewing Mr. Alley's latest book, entitled "Improved Queen-rearing," I can do so only from my own standpoint—a standpoint taken by many bee-keepers besides myself. True criticism is as catholic in rejecting as in accepting. I hardly think it necessary, therefore, to make any excuse for conflicting with his views in a few particulars.

Various have been the methods of queen-rearing set forth from time to time, and their several promulgators have clung to them with tenacity (sometimes a tenacity born of despair), through thick and thin. The present-day bee-keeper comes upon the stage of action at a time when all these various methods are in vogue; and the task that confronts him is to set himself to work, and, from this confusion of systems, evolve one that will be practical in his hands.

We have not tried them *all*, but most of them have come under our notice, and among the rest the Alley system. So far as the *quality* of queens reared is concerned, we have no complaint to make. As good queens may be reared by the Alley system as by any other, provided the essential conditions exist in the cell-building colonies, and the line mapped out by Mr. Alley be carefully followed. What we object to is its complexity and its attendant excessive amount of fussy manipulation.

But what is the Alley system? There are three different modifications of the same given in detail in "Improved Queen-rearing." I shall endeavor to set forth briefly in this the one which the author calls his "favorite," and labels in his book "Method No. 1." It is as follows:

"Seize" a colony of bees in such a manner that not a bee can escape. Take it to your bee-room, and place it on the cap of a hive; "sit down and commence operations." Thoroughly tobacco-smoke the bees through the wire screen that confines them, drumming the hive in the meanwhile. Next, raise the screen cover and brush them into the aforesaid hive-cap, frame by frame. See that so much tobacco smoke is used that they can not fly. Hunt the queen up and remove her. Precipitate the cluster into one corner of the hive-cap by a sudden jar, and then dump them into another box, the exact size of the one they originally occupied, having on a wire-cloth bottom. Confine them in this again. Nail three pieces

of $\frac{1}{8}$ inch stuff across the bottom, to allow a free circulation of air when set down, and put in a cool place for the present. "At this stage of the work we have a colony of queenless bees."

Next prepare your strips of comb, killing every alternate egg by twirling a matchstick in the cell it occupies, and fasten to horizontal bars by means of a preparation of melted rosin and beeswax. Next step, put a prepared frame of eggs into a brood-box, filling the same with combs of pollen and honey—no brood. Next set the brood-box on the floor between yourself and the queenless bees. Give the hive containing the latter a "sudden drop," which again precipitates the bees; and before they "recover from their surprise" remove the cover. Place it on the brood-box, and quickly clap the same over the hive of "surprised" bees. "Now all the labor is done." (We should hope so; but, alas! no.) Leave the bees in the bee-room over night. Place them on their stand in the yard next morning at ten o'clock. Supply them with water during confinement by splashing it through the wire screen on top. Upon releasing, cage a queen at the entrance in order to pacify the bees. At the end of twenty-four hours "another thing must be done;" viz., the embryo cells must be removed and placed on the top of a strong colony for completion. This, in its most condensed form, is the method recommended by Mr. Alley.

It is hard to conceive how a more elaborate and complex system of queen-rearing could be devised. Still, our duty is to find out whether better queens can be reared by it, and, if so, adopt it. Experience, however, goes to prove that this is not the case (and in this the author agrees if we interpret him aright—see page 24, lines 21–25). Queens equal in every respect can be reared by methods that are very much simpler—methods more easily grasped by the beginner, more effective in the hands of the expert, and more profitable when employed by the man who makes a business of raising queens.

I am aware that some of our large queen-breeders use the Alley system, are satisfied with it, and prefer it to any other. This, according to my way of thinking, is attributable to the fact that they learned to use it years ago; and although more direct ways to the same results have been discovered, they prefer the old beaten path.

I advise the readers of this article to refer to GLEANINGS for August 15, 1899, and read an article by Mr. Alley, and the editorial footnote by Mr. E. R. Root, in the same. For me to start making contrasts again would be irrelevant.

Mr. Alley also speaks of another modification of his system, which, although not his "favorite," is highly recommended by him. I give the same without comment:

Proceed as in the manner already described, but, instead of having the cells completed in the upper story of a strong

colony, give them to one from which the queen has been removed for about twelve hours. After five days remove them to a queenless colony and reintroduce the queen. Mr. Alley does not take much stock in queens reared under the supersedure impulse, nor, in fact, in a colony that is queen-right. His views in this respect conflict with those of many queen-breeders, and, incidentally, with the writer's.

Judging from the photo at the beginning of his book, Mr. Alley has now reached the age of the "sear and yellow leaf." He can recollect the time when a halo of mystery surrounded the bee-hive, and the pursuit was shrouded in ignorance and superstition—when each hive was said to have a "king," and bees carried "wax" on their feet. He has seen the time when absconding swarms were called home with the dinner-bell, and when colonies were draped in mourning at their master's death. He has watched the industry in all its stages of growth, and himself played no mean part in contributing to its present development. Mr. Doolittle, I think, once said that he looked upon his own book as his offspring—his child; and it is possible that Mr. Alley entertains the same parental feeling toward his queen-rearing system, and well he may; for did it not take the best of his thought to formulate such a plan—a plan which, although objectionable on account of its intricacies, is irreproachable so far as the quality of queens reared by it is concerned?

Mr. Alley, it will be seen, is no amateur. His knowledge of things apicultural is not of mushroom growth, but of that healthy state of development which only years of experience and close application can give. Among the world's bee-keepers he stands forth a veteran of the veterans.

Space forbids my commenting further on this work. "Improved Queen-rearing" is a book of 55 pages, and deals with the subject purported in the title from the time the egg is deposited to the time the queen is fertilized and laying. The author describes the formation of miniature nuclei; different methods of introducing fertile and unfertile queens; the use and abuse of tobacco; shows the picture of a pipe from which the fumes of the "vile stuff" are exhaled instead of inhaled; illustrates queen-cells good and bad, and gives a summary of his complete outfit at the end. We think this work should have a place in the library of every bee-keeper.

Medina, Ohio.

[For some time back I have been trying to find time to read and review Mr. Alley's latest book on improved queen-rearing. As Mr. Alley is one of the veterans, and has spent more than an average lifetime in studying and rearing queens, I felt that this book deserved a careful review. As the time did not come to me, I turned the book over to our head apiarist, Mr. G. W. Phillips—a man who is well versed in bee literature, and who has spent a number of

years in rearing queens, not only in Jamaica, but for us here at Medina.—ED.]

FORCED SWARMING.

How to Proceed in Such a Way as to Prevent Subsequent Natural Swarming; why Starters are Preferable to Drawn Combs.
A Valuable Article.

BY J. E. CHAMBERS.

I see Mr. W. K. Morrison has sounded his note of warning respecting forced swarms and starters (see GLEANINGS, March 15). I wish to state that Mr. Morrison is altogether wrong about such swarms ever becoming weak. Evidently he has made the sad mistake of supposing that it is useless to make the second drive. In my practice I should never make the first drive if I did not intend to follow it with a second, and that in a short time. The reason is obvious: The honey-flow waits for no man, and the colony must be kept strong. No one should think of increase by this plan; for, while it is possible to make some increase during the time of brushing, there are other and much better ways of doing it.

In this article I wish to give some of the different plans—all modifications of the original methods set forth by Mr. Stachelhausen a good many years ago. I myself have used all of these plans with considerable success. As a matter of fact, depriving a colony of all its brood stops the swarming impulse temporarily at least. I have endeavored to find out which of the combinations would most effectually destroy the desire to work up again to a condition of swarming, and results are given in this article.

In regard to the other statement made, viz., that bees on starters build too much drone comb, I can see how, with a deep hive, such might be possible. My hive is of the six-inch depth, and seven-eighths of the combs built are worker size of cell.

The following is a plan I have practiced for a long time: Place two colonies side by side; give each two shallow hive-bodies for development. A few days before you think they are going to swarm, place a case of sections between the hive-bodies on one of the colonies, and on the other place a shallow hive with large starters. In a few days the latter will have started to draw the foundation. Now place the upper story, with the partly drawn frames of foundation, with all the bees in it, in the middle of the ground occupied by the two colonies; remove the old hives to new locations; put the section-case with its bees on the new hive, and give them either of the queens belonging to the old colonies. It may be necessary under some conditions to give the queen in a cage, though I have never done so. This gives a very powerful force of field bees, and room must be given in proportion.

You can pile the shallow bodies containing the old combs and young bees all together, and have a rousing big colony for extracting honey. For a few days, the greater part of the swarm being old bees, there will be some confusion; therefore it is best to have the pairs of hives not less than seven feet apart.

Another modification of the "shook" or "brushed" swarm is this: Breed the colonies up to the greatest possible strength; Then select ten combs containing the least amount of brood; put them into a hive-body and set it on the old stand; put a section-case with full sheets of foundation on top of this body, and brush most of the bees into it. Uncap several of the combs and allow the bees to gorge themselves on the honey. This starts them to building comb. In eight days remove this section of the brood-chamber and substitute the other section; brush the bees into the last; keep the queen and most of the bees in the working hive; allow the brood to be fed and sealed by nurse bees. This settles swarming. A shallow double-decker is an indispensable requisite to this manipulation.

Another way, and the one I think recommended by Mr. Stachelhausen, is to use full or half sheets of foundation, as considered best, and brush all of the bees, using the combs of brood to build up other colonies or make nuclei. This method was far superior to natural swarming, in that it gave at least 20 per cent more bees, and made less work for the apiarist; but it had one very serious fault: The combs of brood could not be utilized to the greatest advantage, and the force of hatching bees was lost to the colony. Since first Mr. Stachelhausen gave to the public this plan, he has modified it considerably. Though many claim to have arrived at these different plans independently, I believe the credit rightly belongs to him.

I have modified this plan for my own use, and now consider it very satisfactory. I have noticed all that has been said against it, and candidly believe it suited to the careful expert, but not to every careless operator. Either of the other plans is good, and will work with reasonable care. Both can be depended on to get lots of comb honey; but having in mind the matter of soiled and travel-stained sections when producing comb honey over old black combs, I do not use old combs. Half-sheets in the six-inch hive are good enough for me. The amount of drone comb built is insignificant. The second drive gives all the bees I ever need for the flow at home; and after the white-honey flow I can unite again and get a very powerful colony for the slow flow that comes later on. Working thus, I am at all times master of the situation.

I am not in the least dogmatic; but results count, and I get good results every time; so I say, for me at least, the brushing of bees on half-sheets is a decided success.

One thing I wish to mention: Pure Ital-

ians do not go into the supers so readily as Carniolans and their crosses; and, of course, such good results can be had only when the bees rush into the supers promptly.

To hive on drawn combs is a very deceptive thing — at least it is so with me. The bees always store some honey (and I doubt if it can be prevented) in the two outside combs. The brood Mr. Morrison is so anxious to get started would be of no value for at least 24 days, and that would mean a big loss to me. Better — far better — the second drive of young bees before the flow is too far gone. In any case I fail to see how the use of drawn combs would increase the amount of honey or decrease the amount of work. As to the other objections, I am sure that you who are careful to have young queens and shallow hives will never be troubled in the least.

In experimenting with the three plans outlined above, I found that, in order to overcome certainly the desire to swarm, it is absolutely necessary to give the bees plenty of work to do something to keep the young bees busy as well as the old ones; and for that purpose nothing equals comb-building. As in the second plan mentioned, compelling the young bees to nurse the brood in a separate hive will answer the same purpose.

Mr. Morrison says he wants big hives, and so do I, but not for a working hive. No man can get the best results in comb honey with big hives and drawn combs to start with. Whatever size of hive is used for a breeding-hive, contraction must be resorted to, or poor results will follow, no matter who says to the contrary. A really fine article of comb honey can not be got over old combs where the bees can find room to store in the brood-chamber.

Lastly, does not every bee-keeper know that a powerful colony of bees in a small hive, with a vigorous young queen, and plenty of room above to store in, will build only worker comb in the brood-chamber? It is different with large hives and old played-out queens, however. The chances are that a good amount of drone comb will be built, if very narrow starters are used in deep frames, and there be any crowding in the supers. The bees during a good flow will be largely compelled to build downward; and as storage room is what they are after, drone comb mostly will be built.

I do not consider that Mr. Morrison has made out any good case against half-sheets of foundation in shallow frames. Evidently he uses a frame too deep for the best results, or allows the bees to be too crowded in the supers. At any rate he gets lots of drone comb in his frames and I do not. He gets more honey over drawn combs, but I get fully a third more over starters, and of course mine is whiter. He gets a good lot of brood in his combs that will be workers in about thirty days; but I get by a second drive a wad that are workers right now.

Vigo, Tex.

AN EIGHT-FRAME OBSERVATORY HIVE AT THE MINNESOTA STATE FAIR.

An Interesting as well as Educational Exhibit.

BY PROF. F. L. WASHBURN.

The readers of GLEANINGS may be interested to see the accompanying photograph of an observatory hive recently exhibited by this department at the Minnesota State Fair, and to hear an account of our successful experimenting with the same.

The case is of oak, with plate-glass sides, the whole thing built to scale as regards space and dimensions, so as to have the capacity of an ordinary eight-frame hive. The opening of the usual height, and about $1\frac{1}{4}$ inches wide, is at the lower right-hand corner. On Thursday preceding the fair we had shipped from a distance, for obvious reasons, a strong colony of Italian bees, and placed them in the fair building on a stand upon which we planned to put the observation hive later, an opening having been made through the wall of the building, and fitted with a tunnel, which tunnel was placed snugly against the central part of the entrance of the hive, the entrance on either side to the right and left being stopped by a screen. The bees in the original hive, therefore, were free to go in and out, which they did during Friday

and Saturday. On Saturday evening the eight frames were transferred to the observation hive shown in the photograph. The tunnel was fitted closely to the opening in this hive. When Monday morning came with its accompanying crowds, the bees were working apparently contented, going in and out, bringing in pollen and going through the usual routine work common to any well-regulated hive. For the especial benefit, apparently, of the multitude who viewed the hive, the queen laid every day during the week, so regularly and systematically that I regretted not having a nickel-in-the-slot machine, with the wording, "Drop a nickel in the slot, and see the queen lay."

Note the sequel. After the fair, the observation case with its bees was brought to my room in the second story of one of the buildings at the Experiment Station, about half a mile from the fairgrounds, and kept in the dark for over two days. In the meantime, apparently all the young brood had emerged; and when the hive was placed in the same position relatively that it had at the fairgrounds, viz., with the tunnel leading to the open air, allowing the bees their liberty, they immediately swarmed, gathering in a bunch on the ground about 30 feet below and 10 yards to the west of the opening. We looked everywhere for our clipped queen, and, not finding her,

presumed that she was lost or dead. The bees, however, readily entered the hive placed by them; and, although fearful at any moment that we might lose them entirely, inasmuch as they were a valuable colony, I telegraphed immediately for a queen. Before introducing her my assistant examined all the frames covered by the bees which had swarmed and entered the new hive, and, lo and behold! there was our clipped queen, apparently uninjured. I will remark that she is quite a dark queen. The new queen that we had just received, therefore, was given to the few remaining bees in the show-case, was accepted, and is now laying.

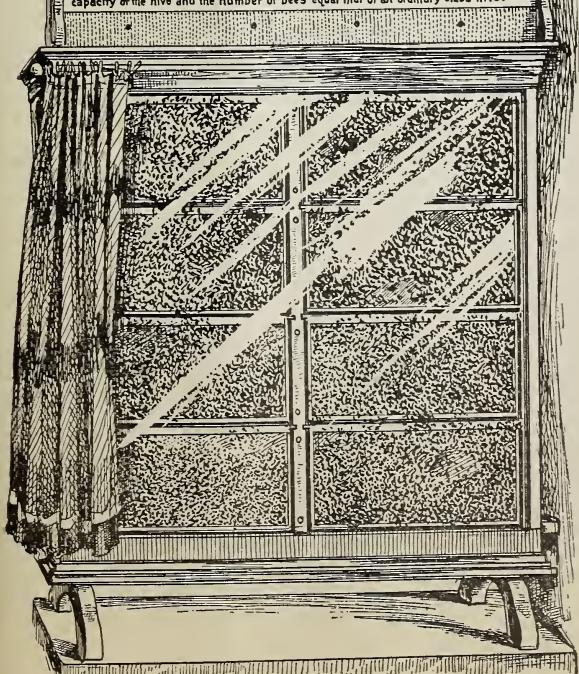
My theory is that the young bees, emerging in considerable numbers while the hive was in the dark, rendered it (as there was already a large number) uncomfortably crowded, and the bees hurriedly made queen-cells and left at the first opportunity. The queen apparently had essayed to fly from the windowsill, and, falling clear of the wall of the building, had been carried ten yards to the west by the wind before reaching the ground. Am I right? To the enthusiasm of W. R. Ansell, of the Mille Lac apiaries, who

OBSERVATION BEE HIVE

EXHIBITED BY THE

Entomological Department of the Minn. State Experiment Station,

—= LEATHER COLORED ITALIAN BEES FROM MILLE LAC APIARIES =—
These bees have freedom and are gathering nectar from surrounding country. The capacity of the hive and the number of bees equal that of an ordinary sized hive.



planned and designed the hive, our success is largely due. F. L. WASHBURN,

State Entomologist.

Agricultural Experiment Station, St. Anthony Park, Minn., Sept. 14.

[This is probably the largest observatory hive that was ever made. As a rule, all such hives have only one comb and a few bees, thus making it easy to find the queen, and herein is the chief advantage of the unicomb size.

You are, no doubt, right in assuming that the queen essayed to fly from the window-sill, and fell down a little to one side of the entrance. The fact that the bees clustered so near the old entrance would indicate that the queen was there. It is not easy to find her majesty in an open cluster. While she is, as a rule, on the outside, one might look for hours and not see her, while it would be comparatively easy to find her after the bees had got settled on a full set of combs.

We found it impossible to reproduce the photo, owing to the fact that it was light-struck by reflection. We therefore had our artist make a pen-drawing, which will give an idea of the general size and character of the hive.—ED.]

A BAD CASE OF ROBBING.

How it was Stopped by Killing the Actual Robbers with a Kerosene-torch.

BY F. L. MORRILL.

This experience is probably what others have gone through before, and I give it thinking it may be useful to some one who may at some time be in the same predicament that I was in a few weeks ago. Just prior to the time I speak of, this locality was visited by a hot north wind. The heat was intense; and as I had shade-boards over all the hives, I thought none of the combs would melt down; and, being busy with other work, I did not visit the bees for several days. When I did I found the apiary in confusion. The bees were crazy, and began stinging before I came within a quarter of a mile of them. The air was full of mad, stinging bees. I soon found that it was the worst case of robbing I had ever heard of. The whole yard of 180 colonies was demoralized. Some of the combs had melted in the extracting-supers; and as it was at a time of the year when there was no flow of honey it set the bees to robbing. I did not dare to close the hives up entirely, on account of the heat; but I immediately closed the entrances so that only one bee could go in at a time, and then I tried every thing that I had ever heard of to stop robbing, but with no success. I flooded the robbers with water. I smoked them with sulphur smoke where they gathered on the hives. I exchanged the hives after dusting the bees, to see where the robbers went to; but they only began to rob their own hives back again.

They would pounce on a strong colony, and go right in, no matter what the resistance.

I went home at night ready to sell cheap or give away every colony I had in the yard. After thinking the matter over I became convinced that, if I saved the bees, I must kill the robbers. The next morning I procured a brazing torch, such as painters use to burn off old paint, and, taking a supply of gasoline, I went for the robbers. I went from hive to hive, throwing the flame on them as I went, wherever I found them trying to get in. They were gathered in great bunches on the now one-beeway entrances. I soon had to cover my hands, as this seemed to make them so mad that they would tackle even the torch. They objected to having their wings burned off, but I was in no mood for leniency. I worked nearly all day in this manner, and along in the afternoon had things somewhat quiet again.

The next morning I used a kerosene-torch with just as good results, but I did not find many robbers, and the next day things were in normal shape again.

You may say that it was too bad to kill so many bees, and that it was a cruel way to do; but had I not done so I should have lost many colonies, and the loss of bees was no matter, as they were only consumers, there being no flow of honey, and no probability of any until fall. In using the coal-oil torch, care should be used so as not to let it get too hot, as it might explode.

Suisun, Cal., Aug. 23.

[It is no doubt true that, when there is a bad case of robbing on, only a *comparatively* few robbers are engaged in the business. If every bee in the yard were robbing, the air would be black with them. But this is usually not the case. It would be reasonable to suppose that a torch applied in the manner you describe around bees caught in the very act would soon destroy the actual culprits, finally bringing about peace and quiet in the yard. I should like to hear from our subscribers, whether any one else has tried this or a similar plan.—ED.]

E. E. R., Cal.—The conditions described in your letter of the 9th point quite strongly to fertile workers. Give a ripe cell from some other colony; and if this does not result in getting a good laying queen, scatter the brood among several strong colonies, and put in place of the brood taken out some brood from other hives.

J. B. S., Ark.—We do not think that smearing the inside of the hive with propolis would have much effect in inducing bees to stay in the hive.

In the matter of egg-laying, queens are pretty apt to cease in the fall of the year. Feeding a little sugar syrup may start her to laying.

A young colony is not as liable to have foul brood as an old colony on old combs.

ADDITIONAL THOUGHTS ON BEE-SMOKERS.

Jabbing the Editor's Ribs Again; Fuel for Smokers.

BY G. C. GREINER.

The smoker article by Mr. S. E. Miller, of Missouri, is tiptop. I call it "tiptop" because, with the exception of a few minor variations, it agrees with my views almost to a letter. It seems more natural to operate the smoker with the left hand, leaving the right to use the other tool, chisel, screwdriver, or whatever it may be. (I use a pocket screwdriver.) When opening the hive I stand behind it; after that I step on the right side, setting the smoker on the frames, on the opposite side from where I begin to handle the frames, or on the hive behind me, when not in use. If Mr. M. is left-handed, his way would be more natural.

If the editor is anatomically constituted like the rest of us human beings, I can not understand how he can twist his thumb on the other side of the bellows unless he uses the smoker wrong way to from the further side of the hive, blowing the smoke toward himself.

If we have the right material—and every bee-keeper shoud have it—lighting the smoker can be done in a twinkling at any time. No shavings, kerosene, nor any thing else is needed. I have three shoe-boxes which I always keep well filled. No. 1 contains well-rotted basswood. It is so completely decayed that a piece taken in the hand can be transformed into powder by a slight squeeze. I find it in the woods where trees are blown down and are decaying. No. 2 contains rotten apple-tree wood. This is quite solid, about half way between the former and sound wood, so that it frequently requires saw and hatchet to work it up into proper shape. I have an old hollow apple-tree near the house that has supplied me for two or three years. No. 3 contains—I am almost afraid to say it, but will tell the truth—tobacco. This may go a little against the Root principle; but the Lord made it, and it is for man to use it according to his best judgment. So I own up that I use it by way of a little brier-pipe. I am not a very heavy smoker; but when I expect a real hot time I always light it, and I lay it in a great measure to my pipe (and gentle treatment) that I can handle my bees almost entirely without a veil, and mittens I never use.

I do a good share of my bee-work by simply using my pipe. This saves the time and trouble of handling the smoker and veil.

To light the smoker I take from box No. 1 three or four little pieces about the size of a finger, from one to two inches long; hold them in a bunch by one end over the open smoker; strike a match, and hold it under the other end. When the wood is well ignited, which will be in a second or two, I drop it, match and all, into the smoker. Then I throw in a few pinches of fine stuff, and after that a few coarser chunks from

the same box, and fill the rest of the barrel from box No. 2; shut up the smoker, and, with a few puffs to get the fire well started, the smoker is ready for business for the next two or three hours unless it is used very steadily and needs refilling sooner. I never leave it open, as Mr. M. advises, and hardly ever lose a fire. Of course, all the material must be thoroughly dried before it will work as described.

Do we need a hook on the smoker? Yes, I consider it a desirable feature, if it is the right kind; but the one sent out by the Root Co. is not that kind. Its shape and place never suited me, and for that reason I never put one on, except the last one. When I received the smoker, one of the late style Corneil, and found that the manufacturers still took the pains to furnish a hook with each smoker, I thought I must have a wrong impression about this hook business, and persuaded myself to give it a trial. I fastened it according to directions; but before I had used the smoker half an hour I was well satisfied that I had made a mistake. After I had scratched my thumb a few times, it came off in less time than it took to put it on.

Venice, N. Y.

[It is all right, friend G., for you to have your notions about the method of handling smokers and the convenience of a hook; but we are not all constituted alike. One of the most extensive bee-keepers in the world—perhaps the most so—gave me this idea of the hook on a smoker-bellows. I consider it a great convenience. Of course, there are sharp points; but what is the use of getting hooked? Those hooks are for the purpose of catching into the wood of a hive. When you handle a pitchfork you are quite liable to get hooked if you are not careful; but I imagine you always handle it right end to.—ED.]

HONEY—ITS SUPERIORITY OVER SUGAR AS A FOOD.

BY DR. J. H. KELLOGG.

Mr. A. I. Root—dear Friend:—I have your letter in reference to honey. I am sending you, with this, something I have written on the subject of cane sugar. I consider honey much preferable to cane sugar as a food. It is practically a fruit sugar, and is ready for absorption. Eaten in moderate quantities it ought to tax the digestive organs much less than cane sugar, and is to be commended.

Many persons ought to be able to utilize honey who can not use cane sugar. Adults often lack the power to digest cane sugar. Cane sugar is chiefly obtained from grasses and roots. It is a sugar adapted to herbivorous animals. One of the four stomachs of the cow secretes a ferment which is capable of digesting cane sugar. Digestion of cane sugar converts it into honey, so honey is practically cane sugar already digested.

Malt sugars are best of all, as they are adapted to the human digestive apparatus, being the natural result of the action of saliva on starch. I think maltose is preferable to all sugars; but honey comes next, and I frequently recommend my patients to use it when they do not find it convenient to use malt sugars. So I consider that you and your busy bees are engaged in good missionary work, and you have my hearty sympathy. Knowledge in health-lines is increasing at a very rapid rate these latter days.

Battle Creek, Mich.

[The above, from such able authority as Dr. Kellogg, ought to have more than a passing notice. Perhaps I should explain that some time ago I wrote, asking the doctor's opinion of honey as compared with sugar, and its effects on the health.

Permit me to suggest that the above refers, of course, to good well-ripened honey. We had on our breakfast-table this morning one of Aikin's packages of honey put up in paper. It is just as clean to handle as butter — perhaps more so. It cuts with a knife just easily enough to be handled conveniently.* At the same time, it can be handled with the fingers, almost without soiling them; and this, too, after it has been kept some time in a room where the temperature is 70 or more. This honey is certainly far superior to much of that on the market

* Mrs. Root melted some of this hard white honey; and, while it is almost water-white, it is so thick at ordinary temperatures that a saucerful may be turned over, if done quickly, without spilling. Such thick well-ripened honey has a sweet flavor that commends itself at once as being wholesome.

that has been thrown out of the combs before it was well ripened and sealed over. I suppose the source from which the honey comes might also have something to do with its digestibility.

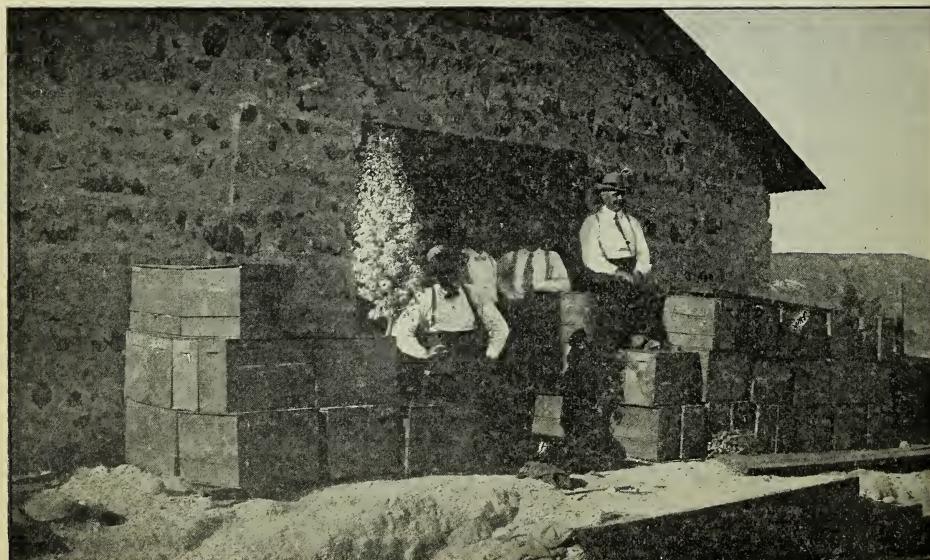
In regard to the pamphlet Dr. Kellogg refers to in his first paragraph, it is a pamphlet of 16 pages, entitled "Dietetics of Sugar." It discusses quite thoroughly the diseases that are usually caused by the excessive use of sugar, such as diabetes, etc. So far as I know, this pamphlet will be mailed on application to Dr. J. H. Kellogg, Battle Creek, Mich.—A. I. R.]

A VISIT TO L. E. MERCER'S APIARY, NEAR LOS ANGELES, CAL.

Mercer's Honey Crop for 1903; Sampling California Watermelons; the City of the Angels.

BY DR. C. C. MILLER.

The day after the Los Angeles convention, Messrs. Hershiser, Marks, and Miller went with L. E. Mercer to spend the day at what he calls his home apiary, some fifty miles from Los Angeles. A glance at the picture on next page will show that these four bee-keepers took interest in some things besides bee-keeping. The absence of coats and the area of shirt-front displayed suggests a hot day—and it was a very hot day—just the kind of day to make one's mouth water at the thought of watermelon. Dead stillness reigned, with no sign of life except the ground-squirrels running about, and a flock of California quails parading innocently by.



L. E. MERCER'S HONEY-STORAGE HOUSE.

The four are seated under the dense shade of a tree close to the house, F. E. Marks at the left, and then, following in order, Miller, Hershiser, and Mercer. The camera was manned by the county foul-brood inspector.

On page 964 are seen the same four outside Mr. Mercer's honey-house. Californians will be a little puzzled to see that beautiful cluster of yucca-blossoms at Dr. Miller's shoulder, for the last of August is not the time of yucca bloom. This one was found in full bloom entirely out of season (was it in compliment to the Los Angeles convention?), the flower-stalks of all others being entirely dead.

in the open, filled with tons and tons of the finest California extracted, and yet they were never molested. When it is understood that many of these yards were down in the canyons, or up on the mountain-sides remote from any dwelling or living being, and that they were visited by the owners only occasionally to extract the honey, the fact that this sparkling sweetness was not stolen speaks volumes for the honesty of the California people. Some tanks were left so exposed that a dog or any large animal might brush against the faucet and let out tons and tons of honey; but in only one instance did I hear of such a casualty taking place; but the bees promptly helped them-



THE INNOCENTS ABROAD TAKING IN CALIFORNIA CLIMATE AND CALIFORNIA WATER-MELONS.

Inside the building were stored the sixty-pound cans containing Mr. Mercer's crop for the season, collected from the different apiaries—50 tons in all, or 100,000 pounds of honey gathered by less than a thousand colonies, spring count. A pretty solid block of sweetness! The two-can cases of honey seen outside the building did not belong to Mr. Mercer, and he did not know who was the owner. Some neighboring apiarist had brought them there, perhaps to be shipped with Mr. Mercer's. Five or six hundred dollars' worth of honey left in that way shows that California bee-keepers have confidence in each other, and it also shows that out in these wilds there is little fear from thieves.

[Your reference to ground-squirrels and California quails parading innocently by brings back many a pleasant memory among the mountains of Southern California, and when you speak of the fact that quite a lot of honey was left outside of the building shown in the picture, where it could be easily stolen if any one were disposed to do it, you also reminded me of the time when I visited a good many of the California apiaries, and found yard after yard where the honey-tanks were left out

selves and carried it all back again—into their little tanks from which it was purloined by man.

It looks decidedly as if it must have been very warm weather from the looks of the four of you in the picture; and I do not at all wonder that the watermelon was delightfully refreshing. Say, isn't it fun to eat California fruit right where it grows?

I have often said to Mrs. Root that I should like to spend my last days in and about Los Angeles—such a climate! such luscious fruit! such beautiful thick honey! such flowers, and such perpetually nice weather the year round! and the summer so near like the winter it would be hard for a tenderfoot to tell one from the other! No wonder that the Spaniards named it the City of the Angels.

Lest there be a flood of bee-keepers into Los Angeles, it may be well to emphasize the fact before set forth in these columns, that our brethren of the craft in this part of the world have a good many off years. They can not safely count on more than two good years out of five. They may get more. Then when there is no honey and no rain is the time that tries men's souls. Beautiful climate does not begin to make up for loss of honey, and waiting year after

year for the flow that does not come. This past season happened to be a good one—very fortunately so, because it was the year when the National paid its respects to the "City of the Angels."—ED.]

If the pig referred to, or any other stock, had jarred a hive there would be a fracas. It is difficult to say in the present case what started the bees.—ED.]



INFURIATED BEES STUNG EVERY THING IN SIGHT.

Talk about cross bees, this season beats any thing I ever saw. The other day they got after a hog that was somewhat lame and stung it so that it died in less than an hour after; when discovered it was simply covered with bee-stings, and the wild mob still after him. They chased the driver and team a quarter of a mile and nearly caused a runaway; every thing and everybody within a few hundred yards had to

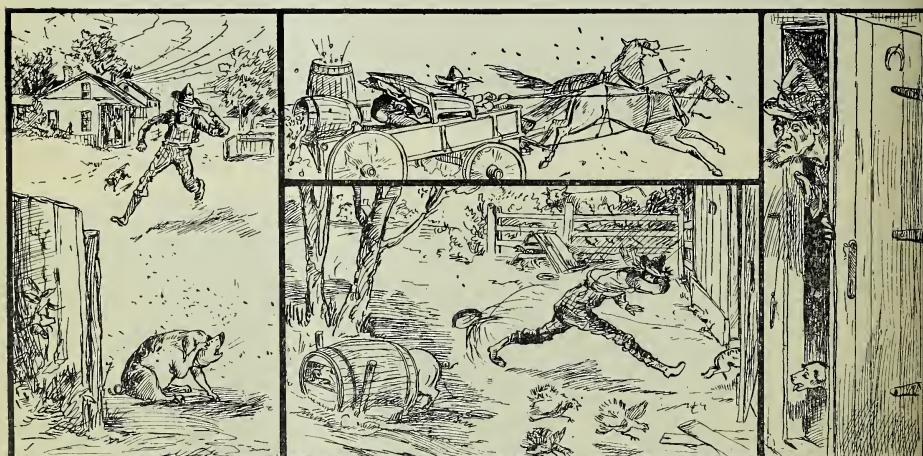
SHOOK SWARMS NOT SATISFACTORY.

The shook-swarm system has been a failure in my hands. About the 10th of May the majority of my colonies had queen-cells started. I shook them as per your directions in GLEANINGS, but they were full of bees, and swarmed a month later—just in the height of the honey-flow. I had enough bees in each hive to fill the first story and two supers; yet they worked more slowly than moderately filled hives.

Don't you think overcrowded hives are worse than moderately filled ones? I have at present 20 colonies. Would you advise me to unite these next spring, and let each cast one natural swarm for the season, instead of proceeding again by the shook-swarm system?

CHARLES L. R. BARNHART.
Rensselaer, N. Y.

[The shook-swarm system has never failed to discourage natural swarming in our locality. I would be inclined to think that



HOW THE BEES STIRRED THINGS UP, DOWN IN OLD MISSOURI.

make for cover; dogs, cats, and chickens had to flee in every direction; even the sparrows had to light out, and one got killed. In spite of bee-veil and gloves, while I was trying to get the hog out of their reach I had to make several times for a dark stable, such was their fury, nor do I know what got them so mad as there was nothing to my knowledge to disturb them.

JAS. BACHLER.

Fredericktown, Mo., Aug. 14.

[There are only two things that will drive bees into fury. One is robbing, and another bumping or tipping over a hive.

you shook them a little too early; but since you say that they had swarming preparations under way, this would be hardly possible.

Shook swarms act in a very different way with us than that described by you. We find that they go to work with almost the same amount of energy that characterizes natural swarms, and the stronger they are the better.

If your colonies come through winter in good order, it will not be advisable to unite them in the spring as you suggest. The uniting, if done at all, should be at the end of the season. If done anywhere near the

swarming season it will produce the very same condition of strength, and attendant propensity to swarm which you desire to obviate. My advice to you is to shake your swarms again—a little later this time—and make a success of it.—ED.]

WINTERING IN TENEMENT HIVES.

I am preparing to pack my bees in a tenement hive, and write to ask:

1. Is it best to leave a space between the hives, and pack them with leaves, or set hives close together? Will a case 28×24×96 inches in the clear be ample for four hives, or large enough for five?

2. Will it not be better to put small colonies, covering four frames, in nucleus hives rather than have them in full-sized hives with division-boards to contract the same?

(REV.) C. GALLIMORE.

Mt. Vernon, O., Oct. 10.

[1. In wintering bees on the tenement plan, the colonies inside of the tenement itself should be put as close together as possible. It would be desirable to have *thin* boarding separate them. Years ago, when we wintered in tenement hives, four colonies in a tenement, we observed that the clusters of bees worked over to the corners of each hive, making one big cluster divided off by the partitions of $\frac{3}{8}$ boards.

A case of the size you mention would be ample; but a tenement hive will not take care of an odd number as well as an even one. Four, six, or eight can be bunched in a little more compactly, as you will readily see. I would not advise making the tenement hive larger than to accommodate four colonies. While tenement hives are very good they are heavy and unwieldy, and are not generally used. If you have a good dry cellar and only a few colonies, I would advise you to winter indoors, for the saving in stores will be sufficient to amount to quite a little. Outdoor-wintered colonies require from one fourth to one-half more stores than indoor.

2. You ask whether it would not be better to put small colonies covering four frames in nucleus hives rather than in full-sized ones with division-boards. I would reply in the negative, if the bees are to be wintered outdoors; but if they are to be wintered in a tenement hive, nucleus-boxes in which the bees could be put compactly together would be better. There must be as little empty air-space for the bees to warm up as possible in any case.—ED.]

THAT NON-SWARMING STRAIN OF BEES— MORE ABOUT IT; SEE PAGE 935, LAST ISSUE.

Mr. A. I. Root:—In answer to your inquiry I will say that the season of 1901 was the best I have experienced in this section for honey. I had 60 colonies—42 in my home apiary and 18 in an out-apiary. These latter were hybrid bees. I took them away on that account. Those left at home

were pure stock, nearly all reared from a selected queen of the Doolittle stock—the one I showed you, whose bees went over three miles to find the black-sage white honey while most of the other colonies were storing darker honey. During that season I had no natural swarms from that strain, and secured 400 lbs. per colony of extracted honey. The native strains swarmed excessively, and I got a much smaller yield of honey in proportion. The seasons of 1902 and 1903 were poor for honey, and there was much less swarming with the native strains; but with the Doolittle strains I have not had more than two natural swarms in the three seasons.

Since you were here I have examined my out-apiary, which has both strains. The colonies reared from my home queen are heavy in honey, while the others have used most of theirs up in late breeding. Our native strains are a mixture of Italians, Cyprians, and Holy Lands. Mr. Harpison says the latter predominate. He introduced them here quite a number of years ago. They are excessive breeders, and in poor seasons use up all the early surplus honey for that purpose; and the result is, neglected apiaries die from starvation. If they had been the other strain of bees they would have had sufficient stores to carry them over. I am not sure but that some of the Cyprian or Carniolan blood mixed with the Italian, in the hands of an intelligent manager, may be a good thing; yet for the average California bee-keeper I think the pure strain the best.

E1 Cajon, Cal.

G. M. HAWLEY.

[Well, you see, friends, I did make the matter a little stronger than friend Hawley puts it; but, notwithstanding this, it is a tremendous testimonial in favor of using queens reared from a very choice breeder.—A. I. R.]

WHY THE HONEY SOURED.

Why did my two jars of white-clover honey sour? I put it up in pint Mason jars with a small chunk of comb honey in it. When I was extracting it the last time I noticed, in uncapping, bubbles in the honey. Was it souring then? If so, why?

I put up 500 pints of white clover, and two were returned by the merchant sour. I am afraid I shall lose his trade, and he is my best customer.

J. J. BURKE.

Pittsburg, Kan., Oct. 8.

[I am not able to explain why the honey you describe soured. You evidently took every precaution necessary if the honey was sealed in the combs; but it sometimes happens that honey from certain sources will sour for reasons that we can not explain. The bees might gather just enough honey from some plant that would cause all the other good honey with which it was mixed to ferment and finally sour. I certainly should advise taking back all samples that are not first quality, and the honey should be boiled after extracting. If it is very

sour you can do nothing more with it than to make it into honey vinegar; but honey slightly sour may be rendered good by boiling, and feeding it to the bees in the spring to stimulate.—ED.]

HOW TO KEEP HONEY FROM CANDYING IN A ZERO TEMPERATURE.

We note in your last issue some comments on a method for keeping honey from candying (extracted). Some twelve years ago we gave you the history of a gallon of honey; but whether it ever saw print or not is more than we can say at present; but we will give it again. At the above time, in June or when the first white-clover honey came in, we extracted a gallon, which we wished to use for making queen candy. As the honey was rather thin we placed the jar on the reservoir of the kitchen stove, with the injunction that it was to stay there till we removed it. Well, it stayed there for perhaps two months, the temperature varying all the way from 75 to 150 degrees or perhaps a little higher at times. This honey was kept for two years, and part of the time in winter, when it went as low as zero, but it never candied. At present we keep our honey in five or six sixty-pound cans blocked up back of the kitchen stove for several weeks before bottling. We believe this will keep it from going to candy until the grocer sells it. We find alfalfa honey quite stubborn. You can melt this honey in the oven, and it's ready to sugar the next day or two.

In the same issue of GLEANINGS we also notice something about the Swarthmore method of getting queens fertilized. We tried it on quite an extensive scale last season, but it failed to work satisfactorily. We used up three or perhaps four hundred virgins. The best we ever did was to get six laying queens out of eight. Some of the boxes gave us three and four laying queens, while the majority would give us but one, two, and three. We tried this method on a large scale—tried it under all circumstances—tried it at all seasons of the year, but the intermingling of the bees is what prevents it from being a success. To have queens mated with the smallest loss possible, there is but one way, and that is to give each individual queen a nucleus to herself. H. G. QUIRIN.

Parkertown, O.

[Some two or three years ago Mr. Henry Alley announced that he had a process for keeping honey liquid indefinitely under all conditions. He did not immediately make it public; but when he did, it was nothing more nor less than keeping the honey in a warm temperature for a period of thirty or sixty days, and then sealing.

Although I have had editorial charge of this journal for a longer time than my father, I do not remember to have seen the method mentioned before it was given by Mr. Alley; so if you sent it on to this journal it must have come before my time.

Whether it was published or not, I can not say.

Your experience in getting queens fertilized in small boxes or nuclei is just about like our own. Swarthmore, however, says he makes it work, and has promised to prove it to me if I will go and see him next summer, which I have partly agreed to do.—ED.]

ANOTHER INSTANCE OF FORMALDEHYDE FAILING TO CURE.

Last spring I discovered foul brood in several of my colonies. After shaking the same on new frames I found I had about 120 diseased combs. Having seen formaldehyde recommended as a disinfectant I decided to try it. I sent to C. H. W. Weber and got a generator and half an ounce of the drug (solidified). By tiering up several hive-bodies of diseased combs on one of your new Danz. covers, using one of the same on top, and giving the whole some three coats of paint, I secured a perfectly air-tight receptacle. I gave the formaldehyde in bigger quantities, and kept on applying it for a much longer time than advised, but it proved a failure; in fact, a cricket came through the process of fumigation apparently unscathed, and hopped out in a lively manner from between the top-bars as soon as I opened the stack of hives. I also made an experiment to see whether the drug would kill moth-worms when later they attacked these combs; but while it destroyed the millers the worms were not in the least affected. In my opinion, formaldehyde is not as powerful as sulphur.

Cantril, Ia. A. B. TACKABERRY.

[You will note that Prof. Harrison says a great deal of the formaldehyde of commerce is very much adulterated; but he also suggests that a stronger dose ought to accomplish the result; but the mere fact that a cricket came through the process of fumigating apparently unscathed would indicate, seemingly, that the drug you had was very, very poor. It certainly ought to be strong enough to kill all living insects before we would expect it to kill the microbes of a disease.—ED.]

S. S., Ont.—You can easily Italianize your bees in the fall. In fact, that is the best season of the whole year to do it. If the combs are built together your better way would be to transfer by the directions given on page 32 of the catalog we are sending you.

J. E. C., Col.—The standard size of sections is 4 $\frac{1}{4}$ square, 3 $\frac{3}{8}$ × 5, and 4 × 5. The thickness varies all the way in the square section from 2 inches wide to 1 $\frac{3}{8}$. The standard plain section, 4 $\frac{1}{4}$ square, is 1 $\frac{1}{2}$ inches wide. The standard 4 × 5 plain is 1 $\frac{1}{8}$ wide; the 3 $\frac{3}{8}$ × 5 is 1 $\frac{1}{2}$ inches wide. There are some sections 4 $\frac{1}{2}$ square, 7 to the foot; but very few of them, comparatively, are made.



I pray not that thou shouldest take them out of the world, but that thou shouldest keep them from the evil.—JOHN 17:15.

He that overcometh, and keepeth my works unto the end, to him will I give power over the nations.—REV. 2:26.

When I got back to my Michigan home in October, I found a very cordial welcome from the Sunday-school, especially from that class of thirty or forty I have told you about. As there was to be no preaching that evening (the pastor comes to that church only once in two weeks) one of the girls in my class came to me after Sunday-school, saying something like this:

"Mr. Root, there is no preaching to-night, and won't you talk to us if we will all come?"

"Why, Alice, this should have been thought of sooner, so as to be announced before the closing of the school. I am afraid the people are not ready, just as I am not ready. I have made no preparation for any talk."

"But, Mr. Root, we will give the notice, and guarantee that you will have an audience; you always have something good to say to us, even if you don't have much notice ahead."

I still tried to excuse myself; but when another and still another of the young people from my class put in their plea, I told them I would gladly do the best I knew how; and when the hour came for the evening services, the sight of a very fair audience of bright expectant people (mostly young) made my heart glad.

Now, I hope these same young people will excuse me if I mention some things that I would not think of mentioning were it not that I have a feeling it might do good to the young people in other neighborhoods and other churches.

In the further corner of that little church—that is, one of the corners furthest from the minister's desk, the young people of the neighborhood usually gather. They are busy, hard-working people, especially at the time of year when potatoes (the main crop of that region) are being harvested. These people, young and old, work hard from daylight until dark in October. There is no let-up from their labors until Sunday comes; and I am very glad indeed that Sunday rest is so generally observed in that region. Perhaps one reason why the Sunday-school is so well attended is that these hard-working folks, especially the younger ones, are constantly watching for some opportunity to get together. We in the towns and cities have no idea of the way in which they enjoy any sort of recreation. As a consequence, there is more or less visiting on Sunday. Now, while I think this is an evil, I am led to believe it is by no means the worst thing in the world. If young peo-

ple get together in their various homes at seasonable hours, it is not to be compared with meeting in a saloon open on Sunday, or some sort of gambling-den. Those who attend Sunday-school regularly are not apt to be frequenters of the saloon. Well, now, let us get back to that young people's corner.

The seats are long, and they usually crowd them (in that corner) pretty full—eight or nine, and sometimes ten of the smaller ones, in a seat; and, as a natural consequence, there is a good deal of merriment and visiting before service begins, and, I am afraid, sometimes *after* the services have commenced, and even during the preaching. I have been absent so much during the past summer I do not know how bad it is; but after one evening's service the good pastor gave the young people in that corner quite a "talking-to." It was very kind, and none of them should have taken offense. But somebody told me the young folks did not like him very well because he "scolded" so much about their whispering and playing during services. Now, while I think of it I remember that, a year ago, Bro. Reed was annoyed in the same way, and I thought at one time he was altogether too severe in his reproof. As he is old in the ministry, however, he may have been right and I wrong. When I spoke to him about it he said the remarks were directed mostly to one young woman who had to be reproved the second time during one service.

Now, friends, this is a problem that has to be met almost everywhere; and I am sorry to add that this sort of irreverence for the house of God (or, perhaps we might say, the *man* of God) has often stirred up unchristianlike feelings, not only in the hearts of the young people, but, I fear, in the heart of the pastor. I do not know just what the proper remedy is. I suppose it depends largely on circumstances; but I do believe that the *love of Christ*, and the influences of the Holy Spirit, in the heart of the pastor, *ought* to correct the evil, and leave only feelings of love on both sides, instead of bad feelings.

When I was ready to announce my text I found the young people crowded into that further corner as usual, and I prayed for grace and wisdom. God answered my prayer, and gave me—I was going to say the *victory*. But I do not think *victory* is the proper word. It might hurt the feelings of some one among those young people whom I love; and God knows I would not do any thing nor say any thing to mar the kindly feelings existing between us for any thing in the world. Let us say, through kindness and love I came out winner.

We have in the church a very pretty little organ; and sometimes we have quite a nice little choir of young men and women. Of late, however, the young men do not come up before the audience with the young women. They make the excuse that they do not have time to practice during the week. On this particular evening those back of

the organ were all young ladies. After I had prayed for wisdom I said something like this:

"Dear friends, it makes my heart glad to see you all gathered here to-night; and it makes it gladder still to think that you have honored my poor self by asking me to talk to you. I am not a preacher, as you know, and I am not an *orator*, as you also probably know; therefore I shall give you only a friendly familiar talk; and as it is a little hard on my lungs to make you all hear (and I want every one of you to hear every word I say), I shall be very glad if you will come up near me and occupy the front seats. I want to look into your faces, and I want to suggest some things to you that I think will help you all your lives to be better men and women."

At this juncture I began to realize that the boys in that further corner would hardly have the courage to come up in a body so near the pulpit. I do not think they feared *me*, but perhaps they felt a little embarrassed about coming up so near what is, in revival times, called the "anxious seat." But in a moment a bright idea came to me. God sent it, I think, in answer to my prayer. I turned to the young ladies back of the organ, and said, "If the singers on the platform will take the front seat, I am sure the young men will come up and sit right back of them."

At this there was an audible titter among the boys and girls; but I saw in an instant that my plan had appealed to their best nature in the right way. They arose in a body, and came up as near to me as the seats would permit, for I stood just in front of the pulpit. They did not know how I thanked God; but I realized then and there the result of that talk was going to be effective. Perhaps never before did I realize how dear to my heart are those young people in that neighborhood. Too often the minister meets people only in the church, in the *role* of a preacher; but it was my privilege to be around among them in their work in the fields more or less. My love for the potato industry has given me an advantage, perhaps, that many pastors do not enjoy. The talk I gave them is one I gave in these Home Papers some years ago. I will go over it again briefly.

"In Pilgrim's Progress, which I hope you have all read, Christiana and her children, while at the Interpreter's house, were shown an object-lesson. A poor man with a little rake was stooping over and spending his time raking up straws, sticks, and dust. While he did so, a shining angel stood over him, holding just over his head a golden crown, and the angel offered to swap the crown for his poor little ricketty rake. But he refused to listen to her, and even refused to look up, but continually rejected the offer of the crown. You see, if he let his rake go he could no longer scrape together sticks, straws, and dust."

Then I continued, something as follows:

"Dear friends, this is a figure from Bun-

yan's Pilgrim's Progress. It is supposed to be a figure from real life—such lives as you and I are living. Is it possible that we in our busy daily cares are struggling after only straws, sticks, and dust, while a golden crown is just over our heads, and we won't even look up, much less lift our hands to take it as a free gift? Bunyan got all his figures from the Bible. In fact, Pilgrim's Progress is founded on the word of God. The question that confronts us to-night is, 'Is there really any such crown within our reach? Is this a *fiction*, or is it really *truth*? Are there opportunities before us as young people that we might embrace if we could only bring ourselves to make the sacrifice of letting go the straws, sticks, and dust?' Now I am going to give you some Bible readings to-night to show you what the Bible says about it; or, if you choose, we will together look the Bible over and see what authority it gives Bunyan for such a statement.

"You will notice the straws, sticks, and dust that this man gave his whole life to gathering, represent selfishness. He was trying to scrape every thing within his reach for *self*. A farmer, for instance, after he has paid for his own farm, makes a slave of himself and may be of his wife and children, to get another farm, and still another. I mean one of the kind who is so grasping that he loses the respect and good will of his neighbors and everybody else; one who can not take time to go to church nor to remember the Sabbath day to keep it holy (what shall it profit a man if he shall gain the whole world and lose his own soul?), and, we might add, one who never takes time to look above his head and see a golden crown continually offered him day by day by the shining angel. But let us come a little nearer home. Many of you who listen to me have no farms. Perhaps you may say truthfully that you have nothing but health and strength. But are you sure, dear friends, you too are not wasting your time in looking continually down after the straws, sticks, and dust? Are you improving your leisure moments in good reading? Many of the periodicals, I am sorry to say, I have seen in various homes, are no better than straws, sticks, or dust—perhaps worse. If you want that golden crown, be careful of your reading. I am sure you admire the passages I have selected from the Bible that I have read to you here to-night. That Bible is full of such hopeful promises. Whether you belong to the Endeavor Society or not, make a pledge to yourself to read the Bible just a little, if not more, every day of your life, and then ask God to guide you in looking forward to that proffered crown. The crown is *above*; the straws, sticks, and dust right below, on the ground in the dirt. A bright young lady said to me once, 'Mr. Root, when I go to a dance, the next day I have a feeling that I have gone *down* a notch or two. When I resist the temptation to go to a dance, and go to a prayer-meeting instead, the day after

that meeting I have a feeling that I am lifted *up* a notch or two. I am satisfied that the one tends downward, and *only* down, and that the other is upward, and *always* up. I am not going to try to attend prayer-meetings and dances *both* any more. I am going to choose the prayer-meeting, and let the other go.' That was years ago; and you can see by her bright face now that she has her eye on the crown. I do not know how much dancing there is in this neighborhood. I have not seen any card-playing. I hope there is not any of it. It certainly should go with the straws and sticks and dust, for it does not leave any thing behind it. I suppose there is more or less drinking at the saloon near by; but I am sure from the looks of these boys here before me that none of them spend their money for beer. Let me emphasize the importance of building Christian character in another way. There is a greater demand just now for boys and girls with a good solid Christian character back of them than ever before since the world began. If you read the papers, you know of the corruption that exists in all our great cities. You know, too, of the shameful revelations that have come up within just a few days among those holding office in the postal department of the United States. Selfishness—shameful, awful selfishness! Men who have been paid large salaries to *protect* that department have, right while drawing their pay, sold out the property of the United States in order to get a few thousand dollars into their own pockets. They have lost sight of the crown that awaits them as the reward of every honest man, and have been after straws, sticks, and dust. Yes, they have gone down to the depths of shame for a few paltry dollars. Now, the great cities are sending out into the country continually for honest boys and girls. They will pay almost any price for them, especially if they are educated and skillful. The women get great pay as skillful typewriters and in other important places in our offices and factories. But they must be *honest*. The government or the employer does not demand that they be *Christians*; but the word of God tells us there is no real true honesty—unselfish honesty—without the love of God in the heart. Are you, my friends, looking up toward that crown that is held by the guardian angel just over your head? Remember the text about *overcoming*. It is the ones who '*overcome*' who are to be made rulers over the nations. Are you overcoming the temptations that beset you? This has been a beautiful bright Sunday. It is the first Sunday we have had this fall since the day when hunting is permitted by law. You have been so busy during the week that you could hardly think of stopping to shoot partridges. May be some of you have been tempted to hunt on Sunday, God's holy day. Did you *overcome* the temptation? It is those who overcome who are permitted to reach the crown. I do not know what temptations present themselves

before you, dear friends. But you know; and the Holy Spirit will surely guide you, if you make it a part of your life to ask the great Father above day by day to guide and direct you in overcoming selfishness and in reaching up to those higher things that concern the welfare of your neighbor as well as yourself. God has given us glorious opportunities. It rests with us whether we shall rise up and look up, or whether we shall, with bent backs and eyes cast toward the ground, spend our lives in raking up these straws, sticks, and dust.

"Some of you are now attending school. Perhaps a few of you will go away to school sooner or later; but quite a number of you (and I have talked with some) feel that the stern duties of life are such that you can not go to school any more. Do not be discouraged, friends. There are periodicals or class journals published nowadays that will enable a young man or woman to become proficient in almost every line of business. If you will probably follow farming for a livelihood, by all means avail yourselves of the leading agricultural papers. Employ your time in getting useful knowledge in regard to the occupation you expect to follow. The great Father above is pleased to see us study him through his works; and one can nowadays get a good education in almost any line of work by carefully studying the books and periodicals that are published. Time spent in this way will not only be profitable for years to come, but it will enable you to be helpful to your neighbors; and every thing of this kind tends to build up Christian character, and, indirectly, reaches out toward that golden crown. Now, friends, shall it be a crown of *righteousness* we are striving for, or shall it be the sticks and straws and dust of *selfishness*? May God help you in your decision."

I scarcely need add that there was not a whisper during my talk of twenty-five minutes; in fact, I never in my life saw an entire audience give better attention to a speaker. With a prayer in my heart that this little story may help some other teacher, especially where he is met with considerable inattention on the part of his hearers, and with a prayer, also, for the restless wide-awake young people *all over* our land, I close this Home Paper.

SELLING HONEY ON SUNDAY, ETC.

I am much interested in A. I. R.'s remarks on Sabbath observance. It looks to me as though a man's desires had much to do with forming his convictions. In twenty years of Christian work I have never found it necessary to buy or sell or travel on the Sabbath; and I question whether the doing of those things, even in exceptional instances, does not lessen the respect of non Christians for Christians and for the cause of Christ. I am glad that GLEANINGS has a place for such discussions.

AUSTIN D WOLFE.

Parkville, Mo., Oct. 13.

Mr. Root:—I have just read that letter of F. M. Morgan's, on page 553, on selling honey on Sunday, and your answer to it, and I must say that it does not suit me. For 25 years I have been keeping bees, not very extensively, being a farmer, but because I liked to

handle them. Sometimes I had fair returns, and as often very little; but in all that time I have no recollection of selling one pound of honey on Sunday. Once I did give one section to parties passing, going on a visit, and they paid for it as they passed back. I have refused a great many; but to my knowledge not one was offended—usually they came again. Once in my absence parties came eight miles, and no one at home but my daughter. They coaxed her hard, telling her that I would not know it. "Yes, but God would know it," she said. "That will do," they said; "we don't want it."

Now, I am not particular. If they get offended we can. I won't sell on Sunday except for sickness, and then I always give it free.

J. LAMMEY.

Dugger, Ind., Oct. 15.

Friend L., I may be wrong in the position I have taken; but I still think we do a greater harm in driving people away from Christ Jesus than in doing a little business on Sunday. I can agree with you pretty well except where you say, in your closing sentence, "Now, I am not particular. If they get offended, they can." Please bear in mind that Jesus, while here on earth, most vehemently rebuked the Pharisees for laying so much stress on their careful and punctilious observance of the Sabbath. It is hard to lay down cast-iron rules for a Christian to follow. If he has at all times the love of Christ in his heart for his fellow-men, this love will guide him safely and unerringly. I still think we should be doing more harm by stirring up a man's bad feeling, especially if he is one who has never had much of a glimpse of Christ's love, than by going out of our way just a little to serve him on Sunday. May the Holy Spirit guide us in this matter.

something good to occupy head, heart, and hand, Satan will get in his work somewhere. When God said to Adam, "By the sweat of thy face shalt thou eat bread," that curse fell heavily on my poor self. Come to think of it, I do not know but that, in my case, it is *not* a curse. I have sometimes been tempted to think it was almost a blessed promise. Listen a minute. I spent a great part of one day in going around among my neighbors trying to find help. Everybody had just all he could do, and more too. Two of the boys who had worked for me heretofore worked one day each in the rain. I kept along with them as well as I could. One of them, while digging potatoes by the bushel last year, made something over \$2.00 a day; and he worked fully as hard that rainy day as he did while he was digging potatoes by the bushel. This present season I could not very well have them dig by the bushel, because there were so many different sorts that had to be kept separate. Another thing, the ground had been in potatoes the year before, and there were more or less "volunteers" that I wanted sorted out. When night came I do not know but the boys were a little surprised when I paid them \$2.00 each. During the summer I had been in the habit of paying them only \$1.25; but I told them I should feel ashamed to offer them a less price, especially after the way they had worked in the wet. Of course, it did not rain very hard, and occasionally the sun came out and encouraged us. Well, after that rainy day the boys said they could not possibly neglect their own work any more; and I decided I would finish up the potatoes myself, taking plenty of time. Dear friends, I have been over this ground before, again and again; but, notwithstanding, the experience of the last three or four weeks was a revelation to me. You know how often I have prayed for wisdom and understanding in regard to this matter of human infirmities. I have asked God to give me wisdom in advising my fellow-men who were sick and ailing. I have considered the medical advertisements and the well-filled drugstores. Did God intend his children to get well by "dosing" themselves? I think he intended there should be physicians in the world, for the evangelist Luke was called "the beloved physician." When I commenced harvesting my crops alone I would get tired in about two hours, and then I would read a daily paper while I rested. Then the weather would be catching, or there were particular circumstances that rendered it important that a certain task should be finished by a certain time. Pretty soon I skipped the newspaper till it was too dark to work. I worked right along till Mrs. Root announced dinner. In fact, I worked so hard under the enthusiasm of getting the work done, that when I came to dinner it seemed as if I ached in every bone and muscle, I was so tired. A good many times I would take a little nap before dinner. But, oh such dinners! Perhaps

NOTES OF TRAVEL BY A. I. ROOT.

OUR CABIN IN THE WOODS.

When we got back to the cabin in the woods in the fore part of October, I found every thing around there grown up to weeds. I confess I lost some of my enthusiasm somewhat. In the first place, I had been taking things easy, and was unused to work. I was strongly tempted to think I was pretty old to perform hard manual labor; and I will tell you confidentially I made up my mind that first day to get men enough to gather my crops, what there were, and get back to Ohio, where I did not have to work unless I felt like it. Such thoughts did not make me feel happy, however. I knew from past experience that about the worst calamity that could befall me was to think of taking things easy, and getting along without hard manual labor. Josh Billings once said he knew by experience that it is bad to tell lies. Well, I think I can say from personal experience that Satan always finds some mischief for idle hands to do. Yes, old as I am (I shall be 64 the 9th of next month) I know from personal experience that, if I do not have

they were not very remarkable, but Mrs. Root always has good dinners. But, what an appetite I had! A good many times at dinner I would say, "I do not know but I have been working harder than I can stand. It seems now as if I were just about used up." But after the good dinner I felt very much recuperated; and then to prevent playing out before night I usually had a good nap *after* dinner; a little one before dinner, in order to rest up enough so my digestive apparatus could take hold without being too much fatigued; and then a nap of nearly an hour after dinner to let nature make repairs and get ready for another "run." Yes, this human machine of mine often makes me think of a thrashing-machine or an automobile. After a hard job the machinery should not only be well oiled up, but every thing should be examined to see that it is in condition to do its best work. Well, these wonderful hidden forces of nature attend to all this while we are asleep. When the machine has entirely ceased running, God does it. Praised be his holy name.

Well, after that after-dinner nap I would get out of bed, stretch myself, and say, as I straightened out my limbs, "Well, I am all in good running order again. My muscles are all right, and there is not a bit of pain or soreness anywhere. Bring on your work." If I did not add, "May God be praised for this robust health," I felt it in every fiber of my being. A great part of the potatoes were on the hillsides around the cabin. With the Daisy wheelbarrow I could wheel these down to the barn on lower ground cheaper than they could be hauled in with a team; and that Daisy wheelbarrow seems to be a wonderful invention for developing the muscles. Why, dear friends, it is worth all the Indian clubs and dumb-bells, and all the rest of the machinery for developing the muscles, that were ever invented. Instead of investing in these things, just buy yourself a *wheelbarrow* and then do some useful work by wheeling heavy loads every day. Two bushels of potatoes made a very fair load for my strength and muscle. Mrs. Root keeps talking to me about straightening up, and not getting bent over, as so many old people are. Well, with the Daisy wheelbarrow one can stand just as erect as he chooses; and with two bushels of potatoes, making a load of 120 lbs., I do not know of a better muscle-developer for arms and legs than this exercise. Why, I actually felt my muscles growing and enlarging day by day. And here comes in another thing: I never enjoyed eating *fruit* in my life as I did this past fall. The apples were furnished by the neighbors. In fact, they made us presents of them faster than we could use them. The peaches grew on our own trees, and I am sure I never tasted such luscious peaches before in my life—no, not even in California. I suspect the bright, exhilarating air around Grand Traverse Bay has something to do with it. When I first purchased my fruit-

trees I selected peaches that would ripen in July and August, for I thought then we should spend only the summer months up there in the woods. I paid a big price for my fruit-trees in order to get some true to name, and first-class. Well, three trees that were labeled Yellow Rare-ripe, and which were said to ripen in August, were covered with dark-green foliage, and beautiful large peaches that were just getting ready to pick along the last of October. Instead of being yellow they are white inside. I kept watching them and feeling of them every day to see when one was just ripe for use. Of course, they were not what I bought them for; but it did seem as if they were the most luscious peaches, especially when I was covered with perspiration in wheeling great loads of potatoes, that I ever tasted in my life. Some of my trees had only two or three peaches on, and a few of them only one. I was watching them very anxiously to see when they were just at their best. By and by I was forced to conclude that somebody *else* was watching them also; for when I decided they were almost ripe the peach would be gone. I could not believe it possible that the boys who came around frequently to our place were taking the peaches (the new varieties) that I was so anxious to test. Permit me to say right here that, after all our experience in leaving the cabin and surroundings for many months at a time, we have never missed so much as a nickel's worth. Everybody in that locality seems to respect the rights of others. Potatoes are left in pits in the fields perhaps a mile away from any house, all winter long, and I never heard of any being stolen. Well, one Sunday after our return from Sunday-school I saw a big gray squirrel skip out of the woods and run up a peach-tree in a twinkling. He came down again almost as quickly with one of my big red-cheeked peaches—one that was just about ready to pick. I had found the thief. I put after him, yelling with all my might, to make him drop my big choice peach. Not he. He probably concluded that, when he had a good thing in his possession, it would be a bad plan to let it go. Finally I pulled off my fur cap and sailed it at him. When it came pretty near dropping over his head he let go of the peach, and scampered off about as fast as you ever saw a squirrel make speed.

Mrs. Root had been "making friends" with the squirrels until they were getting to be very sociable. One day when she went to pick our first early peas the squirrels had taken them so there was hardly a pea left; and one saucy fellow sat on a log near when she was picking out the few she could find, and "scolded" at a great rate because she was meddling with *his* peas. I told her what I saw, and said we should have to gather all our peaches the next day or we should not have any left. Toward night on that same Sunday I began to think that the few remaining peaches might be taken during the night, and I said I would

go and get what were left, even if it was Sunday. I wonder if some of the good friends will not accuse me again of being loose in my ideas of keeping the Sabbath holy. Well, Mrs. Root and I went out with a tin pan to get the peaches; but we did not gather any of them on Sunday after all. Do you know why? Why, the squirrels got ahead of us. They evidently had held a caucus in regard to the matter, and decided that, if those peaches were not gathered soon, on that very Sunday, these new trespassers on their domains, which they had held during the whole fall, would be robbing (?) them. Some of you may inquire why I did not keep a shotgun and have squirrel for dinner. Because I have never learned how to shoot any kind of gun or pistol as yet. When we want a squirrel for dinner we usually catch one with a steel trap.

Now a word more about hard physical work for a man between sixty and seventy. I do not know how it is with the rest of you, but it does not hurt *me* a bit; on the contrary, it does me good to work every forenoon and every afternoon until my bones and muscles ache with fatigue. In a recent issue of the *Practical Farmer* friend Terry says an old physician told him that hard work does not hurt a man provided he rests enough during the night to feel sound and well the next morning. Well, I think I never did more hard work—that is, muscular work—in my life before than I have during the past few weeks, and I certainly never before enjoyed such exuberance of health. I can not say how much that northern climate has had to do with it, but I suspect it has been a large factor. The children at home tried to persuade me that I would do just as well here in Medina if I kept away from the office and factory, and did the same amount of hard work right out in the open air. There may be some truth in this, but it is not all of it. It is true that, when I am up in the northern woods I do not get into the office at all. My correspondence and writing for *GLEANINGS* is done rainy days and evenings. I have made now something over a dozen trips to Northern Michigan, and it has been a physical building-up *every time*—there has not been an exception. After I get back here to Medina my good appetite and healthy digestion hold out two or three weeks. After that time I usually begin to run down. The hot springs at Agua Caliente gave me perfect digestion without hard muscular work; but I did not have the enthusiasm and love for hard work that I do in Michigan. I suppose the hot climate of Arizona would make a difference.

Now a word about the potato business in the Traverse region. As the prices were up last year, and are now double what they usually are in that locality (40 to 45 cents), there is a great acreage, and people are worrying a great deal about getting them dug before cold weather. As a consequence, help is very scarce. One farmer, I am told,

offered \$3.00 a day *and board* for men to dig and pick up potatoes, and he could not get men at even that price. As a result, children stay out of school, and the farmers' wives and daughters help to pick up. One of the good women told me at Sunday-school she had been picking up potatoes, and she said she never did any work in her life that gave her such a ravenous appetite, and health corresponding. Some of you may smile about getting down to such drudgery as picking up potatoes; but, my friend, it is people who "do not have to" do such work that are to be pitied.

Mrs. Root and I made a call at our neighbor Hilbert's just before we came back to Ohio. Mr. Hilbert himself is now in Cuba, and his wife and some of the children expect to follow him in a few days. Mr. Hilbert's son, Holly, is taking care of the farm-work. I found him with two men in a big field digging potatoes. The variety was Carman No. 3, and they were getting about 300 bushels to the acre. The two little folks, Gladys and Jimmie, that I have told you about, were also picking up potatoes. Jimmie is seven, and Gladys is not quite five. It was between ten and eleven in the forenoon, and these two little chicks had actually picked up 50 bushels of Carman potatoes. Their mother offered them a cent a bushel. Some of the potatoes were so large that Gladys would almost need both her little hands to lift them into the potato-boxes.

Now, friends, please do not rush to the idea that any of you can go up there and grow 300 bushels of Carman potatoes per acre, and sell them for 45 cents per bushel. That would be \$135 per acre in one season. The potatoes were also fine and large. There were not enough seconds to be worth mentioning. I think any dealer would take the pile just as I saw it dug, without throwing out a potato. I will tell you why you can not duplicate the above. Mr. Hilbert is one of the oldest and most successful farmers in that region. His fields where he raised these great crops have grown clover which has been turned under until the whole ground is a mass of fertility, and a part of the field was where he had some of his great crops of berries a year or two ago. The vines were so strong and rank that they had to be pulled out of the way by hand before the potatoes could be dug. Holly told me they grew so rank that the bugs bothered them hardly at all. The only fault that could be found with that crop of potatoes was that they were *too* large. I told Holly he should plant them close enough so as to make them smaller. He said he was going to plant only Carman No. 3 on his farm next year, and that, furthermore, he would crowd them so close together there would *have* to be some small ones. In fact, he said he feared they would not have enough small potatoes for their own planting. Oh dear me! I wish I could tell you of some similar crops in the way of yield around our cabin in the woods. One trouble

is, I tried growing potatoes two years in succession on the same ground. The bugs were bad, and I was not there to look after them, and the blight was bad. A near neighbor who used the Bordeaux mixture faithfully, mixing his Paris green with it, escaped the blight, while mine went down perhaps when they were half grown. My Carmans and King of Michigan did the best of any of them. A few Six Weeks potatoes that were planted early in April made a splendid yield of beautiful nice tubers. They ripened up before the bugs and blight got around. My main crop was planted, contrary to friend Hilbert's advice, about the middle of May. Mr. Hilbert's great crop was planted about the middle of June. Probably this made a great difference.

The new kinds that I tested from the Ohio Experiment Station all suffered more or less. They were planted about the middle of May. Baker's Extra Early is a very nice potato, but it looks so much like Six Weeks I can hardly tell them apart. They are both a variety of the Early Ohio—at least I should call them so. They look very much like the Early Ohio, and ripen about the same time. Admiral Dewey was reported in a potato number of the *Practical Farmer* by quite a number of persons as being one of the very best early potatoes. It very much resembles Carman No. 3. Early Fortune gave a great yield at the Experiment Station, and a fair yield with us. It very much resembles a long Early Ohio. Early Norwood is also a large yielder, with not much tendency to blight; also after the style of the Early Ohio. Quick Crop is another one that I could hardly tell from the Early Ohio in color, shape, or time of ripening. Northern Beauty much resembles the Early Rose. It gave the largest yield of any potato tested at our Experiment Station. Hammond's Sensation, for which much has been claimed, especially in regard to being a handsome potato, gave a very moderate yield, and did not compare in looks with the Freeman or Carman No. 3; and, like most of the above earlies, it seemed to be so nearly like the Early Ohio that I could hardly tell one from the other. It, however, resembles the long Early Ohio instead of the variety that is round like the Triumph.

In regard to our old varieties, Red Bliss, like Six Weeks, gives a very good crop when planted in the fore part of April. Early Trumbull probably gave the best yield of any of the earlies when planted in the middle of May. Bovee gave a good yield, with a quality superior to the average early potato. New Queen gave a fine crop, even though planted on the same ground that bore a heavy crop the year before. Freeman gave us a fair crop of extra-nice handsome potatoes as usual. Lee's Favorite gave perhaps the best yield of all, and the quality is equal to any; but there are a good many crooked and prongy potatoes, and the deep eyes are an objection for table use.

State of Maine, Carman No. 3, and King of Michigan all did well.

After our potatoes were all dug and shipped back to Ohio we had some more hard work in taking care of a crop of five acres of Japanese buckwheat. I think I never got so tired before in my life—that is, in any kind of farmwork—as I did in tying up that buckwheat. As I never learned the trick of tying up bundles by making a band of the straw, I got along faster by using twine—the same kind we use for tying up bags. Of course, the modern way is to harvest buckwheat with appropriate machinery. We did not have the machinery, and so we had to do it the old-fashioned way; and the old-fashioned way gave health and strength, and its attendant happiness and contentment.* I very much fear that, with our modern machinery, and our modern way of living, we are going to lose the health, strength, and enjoyment that our forefathers had. In fact, I am told already that employers in our great cities are obliged to go back into the country constantly to get boys and girls who amount to any thing. Those brought up in the cities are "no good." As for me, I do not know but I shall all my life prefer the "cabin in the woods," with its good old-fashioned ways, with health, strength, and happiness thrown in.

OUR ADVERTISERS.

HATCHING THE EARLY BIRD; A YEARLY IMPROVEMENT IN PRICE AND MARKET FOR EARLY SPRING BROILERS.

It is coming to be more the case with each succeeding year that the cream of poultry profit is obtained by hatching, raising, and sending to market the chickens that have come to be commercially known as "broilers." This term includes, in a general way, birds that weigh from 1 to $2\frac{1}{2}$ pounds at an age of from two to four months. Of course, the highest prices are obtained during the early part of the season, say from March to May. For this reason fully 90 per cent of poultrymen use the incubator exclusively, as it enables

*Perhaps I should mention right here that T. B. Terry has been giving us, through the *Practical Farmer*, some good talks on the importance of outdoor air, day and night; and he is coming down strong on the modern ways of heating—such as steam and hot water in place of open grates. Nothing can insure plenty of outdoor air like the old-fashioned stove with its big open fireplace or grate. Well, that cabin in the woods is warmed with a drum stove that draws like a little steam engine; and pure air comes through the cracks in the floor. We have not put in a tight floor, because we are contemplating a good house or a little cottage, tight enough so the mice can not get in. Mrs. Root can not stand a house where mice have access. You may think our cabin a pretty cold place to sleep in during October nights but, wait a minute. That drum stove will take a log of wood two feet long and eleven inches in diameter. We cut down a tree and saw it up in six blocks like the above. When they are thoroughly seasoned they are kept in a nice little wood-house. One of these blocks holds fire all night, and keeps the cabin quite comfortable, especially with lots of woolen blankets. So we have been living up there in the woods very much as the patients do at the modern sanatoriums where they keep them outdoors, practically, day and night, summer and winter. You see I have been getting all this health and strength and happiness by taking God's medicine; and he has prescribed it in answer to my repeated prayers of many years. Blessed be his holy name! When sugar making time comes we expect to go back again to the cabin in the woods.

them to regulate the season and number of the hatch with entire independence of the hen, which need only furnish the eggs.

In the matter of incubators they have been brought to a point where they actually beat the hen at her own game. Manufacturers have closely studied the natural laws of incubation, and followed them minutely. In the machines made by George H. Stahl, of Quincy, Ill., known as the "Excelsior" and the "Wooden Hen," every problem of heat, moisture, and ventilation has been solved, and it is said they will hatch a greater percentage of hatchable eggs than the mother hen herself under ordinary conditions. Five minutes' daily attention when in operation is all they require. Every one interested in poultry should write George H. Stahl, Quincy, Ill., for his free catalog of Incubators and Poultry Appliances. It is worth having.

Cut green bone is a necessity of the poultryman who wants to make money. It is not a luxury which the hen, with little privation, can do without—it is something that she must have if we expect her to do her best. When we keep a flock to make money out of them, we must feed them right. A good record for eggs depends chiefly on the feed. A wild fowl does not lay more than a dozen or two eggs in a year, but we expect the domestic hen to lay twelve to fifteen dozen, and we can not get this for nothing. We must feed her just what she needs. The hen needs certain elements which we can give her in cut bone at less cost than in any other feed.

The only practical question is—how to provide the bone, and the logical answer is get a green-bone cutter. Save the bones from the table and cut them up yourself; and if this is not enough, call at the nearest meat market, where they will be glad to give you at a nominal price all the fresh bones you can use. If you are a regular customer they may not charge you anything, especially if it is a store that buys your eggs.

All grains contain bone substance, but not enough; and if hens have to depend on grain for bone material, they eat more than they need to supply them with other things. When you supply them with good fresh bone they do not need so much grain, and they will lay more eggs. Every extra egg after the hen's board is paid adds just s'much to the profits—makes her just that much more of a success.

The catalogue of the "Dandy" bone-cutter, made by the Stratton Mfg. Co., Erie, Pa., is really a valuable book of hints on feeding poultry, and is sent free if you mention GLEANINGS IN BEE CULTURE.

CONVENTION NOTICES.

The twenty-fourth annual meeting of the Colorado State Bee-keepers' Association will be held in Chamber of Commerce Hall, Denver, Colorado, Nov. 23, 24, and 25. An unusually fine program has been prepared. One of the interesting features will be a display of Colo.-ado-made bee supplies. An earnest and cordial invitation is extended to all bee-keepers to be present.

H. C. MOREHOUSE, Sec'y.
Boulder, Colo.

The Missouri State Bee-keepers' Association will meet in Mexico, Mo., Dec. 15, 1903. Mr. J. W. Rouse, of that place, will act as host to direct the attendants to the hall, which is free to all who desire to attend. Board can be had at the leading hotels at \$1.00 to \$2.00 a day. Come, everybody who is interested in bees and honey. Let us have a big meeting. We now have 51 paid up members. Let us have it 100. Procure certificates from your local railroad ticket agents when you purchase your tickets. It may be you can return for one-third fare.

W. T. CARY, Sec.

Mr. A. I. Root's Writings

of Grand Traverse territory and Leelanau Co., are descriptive of Michigan's most beautiful section reached most conveniently via the

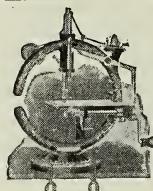
PERE MARQUETTE R. R.

For pamphlets of Michigan farm lands and the fruit belt, address J. E. Merritt, Manistee, Michigan.



the runaway auto at Zanesville, O., fair, ran into Page Fence? It had already counted over a score of killed or injured before it struck the fence.

Page Woven Wire Fence Co., Box S, Adrian, Michigan.



A Sewing-Machine for \$2.50.

The Pony. Absolutely perfect work, making regular Wilcox & Gibbs chain stitch. Will do all kinds of plain family sewing. Especially adapted for travelers. And, how it will please the little girls to find one Christmas! How they will work on Dolly's clothes! Sent complete with extra needle for only ... **\$2.50;** or mailed to any U.S. address for \$2.85. F. J. Root, 90 W. Broadway, New York.



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LANDS

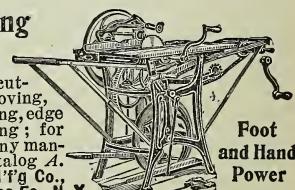
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one season, planting in rotation cauliflower, cucumbers, egg-plants, in beautiful, health-giving Manatee County. The most fertile section of the United States, where marvelous profits are being realized by farmers, truckers, and fruit-growers. Thousands of acres open to free homestead entry.

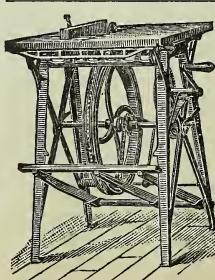
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Handsomely illustrated descriptive booklets, with list of properties for sale or exchange in Virginia, the Carolinas, Georgia, Florida, and Alabama, sent free. JOHN W. WHITE,  
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**Splendid Location for Bee-keepers.**

#### Wood-working Machinery.

For ripping, cross-cutting, mitering, grooving, boring, scroll-sawing, edge moulding, mortising; for working wood in any manner. Send for catalog A. The Seneca Falls Mfg. Co., 44 Water St., Seneca Fs., N. Y.



Foot  
and Hand  
Power



**BARNES'**  
Hand and Foot Power  
Machinery.

This cut represents our combined circular saw, which is made for bee-keeper's use in the construction of their hives, sections, boxes, etc., etc.

**Machines on Trial.**  
Send for illustrated catalog and prices. Address  
**W. F. & Jno. Barnes Co.,**  
545 Ruby St.,  
Rockford, : Illinois.

## CHICKS THAT LIVE

get strong and healthy—gain steadily in weight, are chicks hatched in Reliable Incubators.



### The Reliable

provides automatically a constant current of odorless, warm air at a uniform temperature. Chicks pip, hatch and thrive under its nature-like conditions. Send 10 cents and get our 20th annual catalog—full of poultry information. Reliable Incubator and Brooder Co., Box B-49, Quincy, Ill.

## QUEENS--ATTENTION!--QUEENS.

To have the best queens in every line, plenty of them, to merit your orders by accurate mailing, delivered in good order. Prompt attention is our fixed purpose. Full colonies and nuclei a specialty. Write for catalog and prices.

**The Jennie Atchley Co., Box 18, Beeville, Tex.**

**For Queens** from Best Italian Stock \$1.00; select, \$1.25.

Address J. B. CASE, Port Orange, Florida.

**Geo. J. Vande Vord**  
Queen-breeder. **Daytonia, Fla.**

## HONEY QUEENS

I shall continue breeding those fine queens for the coming season of 1904. Meantime I shall carry over a large number of queens in nuclei with which to fill orders the coming winter and early spring. I am breeding the Holy Lands, the Golden and Leather strains of pure Italians. Your orders will receive prompt and careful attention. Single queen, \$1.25; five for \$5.00. Breeders of either race, \$3.00 each.

**W. H. Laws, Beeville, Texas.**

## Sections, Shipping Cases, Honey Cases,

and every thing necessary for the bee-keeper.

### FINE ITALIAN QUEENS.

Prompt shipping.

Catalog Free.

**C. M. Scott & Co., Indianapolis, Ind.**  
1004 East Washington Street.

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**486-490 Canal St., New York.**

Wholesale Dealers and Commission Merchants in  
Honey, Beeswax, Maple Sugar and Syrup, etc.

Consignments Solicited. Established 1875.

## 4,000,000 PEACH-TREES

TENNESSEE WHOLESALE NURSERIES.

### June Buds a Specialty.

No agents traveled, but sell direct to planters at wholesale prices. Absolutely free from diseases, and true to name. Write us for catalog and prices before placing your order elsewhere. We guarantee our stock to be true to name. Largest peach nursery in the world. Address **J. C. HALE, Winchester, Tenn.**

## Victor's Superior Italian Queens. 1200 in Stock.

Two hundred of these queens I wish to close out this season; the other 1000 I will reserve for early queens for next season. As long as they last, I will fill from the 200 queens at the following reasonable prices.

**One Untested Queen, 75c.**

**One Select Untested Queen, 90c.**

**One Tested Queen, \$1.00.**

**One Select Tested Queen, \$1.50.**

### Remember

that I will open business next season (1904) with 1000 queens in stock, and that "Superior quality" is my motto—for years has had my best thought and effort.

Send me your address on a postal card for one of my 1904 price-lists, beautifully illustrated, as follows: A swarm of Victor's Long Tongue clover-stock Italian bees on his naked arm. How a queen should lay. This is a most beautiful frame of brood solidly sealed; and other beautiful illustrations fully described.

Be sure to ask for one of my 1904 Price Lists.

**W. O. Victor, Wharton, Tex.**  
Queen-specialist.

**Ralston Health Club** of America. Established 1876. Membership over 1,000,000. Purposes: health, happiness, and long life. No periodical fees to pay, but any money turned in is returned in value by books of your choice. Send for "Book General Membership," prepaid \$1.25. Truths of this club contained in above book are proved by experiment. Does not teach medicine. Address

**MARTIN E. ANDERSON, Lindsborg, Kan.**

"I'm a member, soliciting more members by spreading the General Membership Book. It has gone through 80 editions."

## Cuba.

If you are interested in Cuba and want the truth about it, subscribe for the

### HAVANA POST,

the only English paper on the Island. Published at Havana, Cuba. \$1.00 per month, \$10.00 per year. Daily (except Monday).



### EXTENSION AXLE NUTS

Make old buggy run like a new one. Sure cure for wabbles and rattles. Quick seller and very profitable. AGENTS WANTED.  
Hardware Specialty Co., Box 129, Pontiac, Mich.

**POULTRY JOURNAL** How to Make Poultry Pay. A paper worth a dollar, but will send it to you one year on trial, including book, Plans for Poultry Houses, for 25c. Sample copy FREE.  
Inland Poultry Journal, Indianapolis, Ind.

## Fruit-growers

read the best fruit-paper. SEND TEN CENTS and the names and addresses of ten good fruit growers to

**SOUTHERN FRUIT GROWER**, Chattanooga, for six months' trial subscription.

Regular price 50 cents. Best authority on fruit-growing. Sample free if you mention this paper.

## In Close Touch With The Whole World



### Stromberg-Carlson Telephones

are the most economical to buy. Strong in mechanism — strong in talking qualities and guarantee. Send for free book F-36, "Telephone Facts for Farmers." It proves our claims. Address nearest office.  
Stromberg-Carlson Tel. Co.  
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### DANDY

#### GREEN BONE CUTTER

and get dandy satisfaction in every way. Try it before you buy it for 15 days. If not satisfactory we'll take it back.  
Stratton Mfg. Co., Box 54, Erie, Pa.

### AN EGG MAKER

Nothing equals green cut bone for hens. Any one can cut it with

#### Mann's Latest Model Bone Cutter.

Open hopper. Automatic feed. 10 Days' Free Trial. No pay until you're satisfied. If you don't like it, return at our expense. Isn't this better than than to pay for a machine you never tried? Call or write.

F. W. MANN CO.,  
Box 87, Milford, Mass.

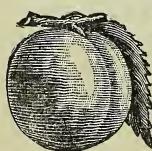


### MAKE HENS PAY

Humphrey Open Hopper Bone Cutter  
Humphrey Rapid Clover Cutter

will double your egg yield and cut your feed bill in half. Guaranteed to cut easier and faster than any other. Trial offer and catalogue free.  
HUMPHREY, Nine St., Factory, Joliet, Ill.

**"This for That"** Trade anything you have for anything you want.  
Get our gigantic paper which prints thousands of exchange advertisements. Six months' trial subscription, 10cts.  
"THIS FOR THAT" PUB. CO., 0-190 Star Bldg., CHICAGO.



### PEACH

Grand lot of trees, grown on the bank of Lake Erie, more stocky and hardy than trees grown in the interior; two miles from any peach orchards and free from borers and all other diseases. Large stock of fruit trees and small fruits of all kinds. Headquarters for

### ORNAMENTAL TREES, SHRUBS, BULBS.

40 Acres Hardy Roses, including 45,000 of the famous Crimson Rambler. 44 greenhouses filled with Palms, Ficus, Ferns, Pandanus, Roses, etc. Correspondence solicited. Catalogue Free.

**THE STORRS & HARRISON CO.,**

Painesville, Ohio.

## 450,000 TREES

200 varieties. Also Grapes, Small & large fruits, etc. Best rooted stock. Genuine, cheap. 2 sample currants mailed for 10c. Desc. price list free. LEWIS ROESEL, Fredonia, N. Y.

## YOU'RE LOOKING

for just such a machine  
as Miller's new

**Ideal Incubator,**  
the perfect hatcher, sent  
on 30 days' trial. Absolu-  
tely automatic. Test it  
yourself. Big poultry and  
poultry supply book free.

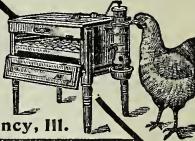
J. W. Miller Co., Box 48, Freeport, Ill.



**\$12.80 For  
200 Egg  
INCUBATOR**

Perfect in construction and  
action. Hatches every fertile  
egg. Write for catalog to-day.

GEO. H. STAHL, Quincy, Ill.



## THE SUCCESSFUL

Name of the best Incubator and Brooder  
made. Not a chance. They're right  
in principle, work  
right. Require  
least attention and  
give best results  
under all conditions.  
Order All  
say it. Eastern  
orders promptly filled from Buffalo house. Incu-  
bator Catalog free, with Poultry Catalog 10cts.

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Succeed  
with a  
**Successful**

## POULTRY PAYS



when the hens lay. Keep them  
laying. For hatching and brood-  
ing use the best reasonable priced  
Incubators and Brooders — built  
upon honor, sold upon guarantee,

**THE ORMAS**

L. A. Banta, Ligonier, Indiana

## This Lightning Lice Killing Machine

kills all lice and mites. No injury to birds or feathers. Handles any fowl, smallest chick to largest gobbler. Made in three sizes. Pays for itself first season. *Air Listerine Lice Killing Powder, Poultry Bits, Lice, Malaria, etc.* Write for special low express rates. Catalog mailed free. Write for it.

CHARLES SCHILD, Ionia, Mich.

**FENCE! STRONGEST MADE!** Bull  
Strong, Chicken  
Tight. Sold to the Farmer at Wholesale  
Prices. Fully Warranted. Catalog Free.  
**COILED SPRING FENCE CO.**  
Box 101, Winchester, Indiana, U. S. A.

# TWO YEARS FOR \$1.00

After a man succeeds in publishing a good journal, the next step is that of getting it into the hands of the people, of getting them to reading it, and becoming acquainted with its merits. This can be done by advertising, sending out sample copies, circulars, etc. All this costs money. I think I am safe in saying that every new subscriber I have received, I have paid out \$2.00 in advertising; hence I have often said that a publisher of a good journal could afford to send his paper one year free, for the sake of getting it into new hands. It would cost no more than other forms of advertising, and would be very effective, but, for obvious reasons, this plan could not be put into practice, but I am going to come as near to it as I can. I have between 200 and 300 complete sets of back numbers for the present year; and as long as the supply holds out I will send a complete set, and the rest of this year free, to any one who will send me \$1.00 for the Review for 1904. For a few particulars regarding the numbers already published this year, read the following:

## REVIEW FOR 1903.

**January** illustrates and describes a Queen Incubator and Brooder which allows the bees access to the cells and queens at all times. It also contains several excellent articles on the subject of Commercial Organization among bee-keepers.

**February** contains a five-page article, perhaps the best ever published, on foul brood. It tells how to detect the disease with unerring certainty, to prevent its spread in the apiary, to keep it under control, build up the diseased colonies, secure a good crop of honey, and at the same time securely rid the apiary of the pest, all in one season, with almost no loss.

**March**, gives the portrait of a veteran bee-keeper of Michigan who manages out-apiaries 50 miles from home with only four visits a year, averaging a profit of \$150 each visit. He describes his methods in this issue of the Review.

**April** has a frontispiece of bronze blue showing Mr. T. F. Bingham's apiary and wintering cellar, and Mr. Bingham describes the cellar and its very successful management. L. Stachelhausen tells how to prevent both natural swarming and increase in an out-apiary, and secure a fine crop of honey.

**May** illustrates and describes a tank and method for fumigating foul-broody combs with formalin. This is the largest tank, and most extensive, successful experiment that has been made.

**June** illustrates and describes the use of the cheapest power for hive-making, wood-sawing, feed-grinding, water-pumping, etc.—a power windmill. **July** has articles from such men as R. L. Taylor and H. R. Boardman on "End of the Season Problems," those problems that come up just as the honey harvest is closing and preparations for winter come on apace. Mr. McEvoy also tells how to treat foul brood after the honey harvest is over.

**September** has an article from Mr. H. R. Boardman, in which he describes his wintering cellar above ground, and tells how he succeeds in controlling the temperature and ventilation—sometimes using artificial heat. R. L. Taylor contributes an article on "Commercial Organization Among Bee-keepers," in which he states the case so clearly that no more argument is needed.

**October** is pretty nearly taken up with only two articles. The first is by R. L. Taylor on "The Cellar-wintering of Bees." It is an old subject, but Mr. Taylor has the faculty of saying new things on old subjects. He covers the ground very completely, and gives many a useful hint to the man who winters his bees in the cellar. The other article is by the Editor, in which he writes of California as a bee-keeping State, giving eight beautiful illustrations made from photos taken by himself when on his recent visit to California. Several of these are full page.

**November** or December will be a special number in which the editor will describe that paradise for bee-keepers, Northern Michigan, using a large number of cuts from photos that he took last summer while on an extended visit to that region.

Perhaps you may have intended subscribing at the beginning of the year—subscribe now and you will get the back numbers—wait until January and it is not likely you will get them.

## SUPERIOR STOCK.

The price of a queen alone is \$1.50, but I sell one queen and the Review for one year for only \$2.00. Just at present, as explained above, as long as the supply of back numbers for 1903 holds out, all new subscribers for 1904 will receive them free. In other words, if you order soon you can get the Review for 1903 and 1904 and a queen of the Superior Stock next Spring, for only \$2.00.

W. Z. Hutchinson, Flint, Mich.

# Gleanings in Bee Culture

[Established in 1873.]

## Devoted to Bees, Honey, and Home Interests.

Published Semi-monthly by

The A. I. Root Co., - - Medina, Ohio.

A. I. ROOT, Editor of Home and Gardening Dep'ts.

E. R. ROOT, Editor of Apicultural Dept.

J. T. CALVERT, Bus. Mgr.

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**TERMS.** \$1.00 per annum; two years, \$1.50; three years, \$2.00; five years, \$3.00, *in advance*; or two copies to one address, \$1.50; three copies, \$2.00; five copies, \$3.75. The terms apply to the United States, Canada, and Mexico. To all other countries 48 cents per year extra for postage.

## The National Bee-Keepers' Association.

### Objects of The Association:

To promote and protect the interests of its members.  
To prevent the adulteration of honey.

### Annual Membership, \$1.00.

Send dues to the Treasurer.

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### Special Notices by A. I. Root.

#### THE CROWN THAT IS JUST OVER OUR HEADS, AND WITHIN OUR REACH.

When I spoke about my Bible-reading, on page 969, I had lost my list of references. Since then it has unexpectedly come to light, and I submit here the readings for those who may care to know what the Bible says of Bunyan's figure of the man with the rake:

I. Cor. 9: 25; II. Tim. 4: 7; James 1: 12; I. Peter 5: 2 - 4; Rev. 2: 7, 10, 26; Rev. 3: 5, 12, 21.

It will be noticed the passages from Revelation do not all refer to the crown, but they speak of the promise "to him that overcometh."

#### WANTED—SEED OF THE CALIFORNIA SAGE.

If any of the friends in California can furnish us a pound or two, or even less, of either the white or black sage that bears honey in California we shall be very glad to get it. If you can not get us a pound, send us an ounce of one or both kinds, and we will try to pay you for your time and trouble.

#### DAVIS WAX BEANS, ETC.

Last season we at one time paid \$6.50 a bushel for Davis wax beans to fill orders. About this time I discovered many of our potatoes were not coming up, in consequence of the protracted cold wet weather just

about the time they were planted. In about two hours one of our boys with a hand planter put a hill of beans wherever a hill of potatoes was missing. Well, I pulled and dried and thrashed them all, and got about four bushels of nice beans. I thought best to mention it for fear some of the friends might think I am not much of a farmer after all, if it took me three weeks to harvest two acres of potatoes and five acres of buckwheat, even if I did have to do it almost alone. I do not know now what wax beans are going to be worth for seed for next year. Of course, they were cultivated when we cultivated the potatoes; but we could just as well cultivate some hills of beans as to keep cultivating all through the season around "nothing at all."

#### SEED POTATOES FOR 1904.

Instead of having 1000 bushels to sell, as I had a year ago, I have scarcely 100. I have not seen any other prices quoted by any other seedsman; but there will probably not be very much variation from the prices given below, the same as we started out with last year:

TABLE OF PRICES.

| NAME.                    | by mail. |        |         | Half Peck. | Peck. | Half Bushel. | Bushel. | Barrel, 11 lbs. |
|--------------------------|----------|--------|---------|------------|-------|--------------|---------|-----------------|
|                          | \$ 1 lb. | 3 lbs. | 10 lbs. |            |       |              |         |                 |
| Red Bliss Triumph.....   | \$ 18    | 40     | 90      | \$ 30      | \$ 40 | \$ 75        | \$1.25  | \$3.00          |
| Six Weeks.....           | 18       | 40     | 90      | 30         | 40    | 75           | 1.25    | 3.00            |
| Early Michigan.....      | 18       | 40     | 90      | 30         | 40    | 75           | 1.25    | 3.00            |
| Early Trumbull.....      | 18       | 40     | 90      | 30         | 40    | 75           | 1.25    | 3.00            |
| Brown Mountain.....      | 18       | 40     | 90      | 30         | 40    | 75           | 1.25    | 3.00            |
| New Queen.....           | 18       | 40     | 90      | 30         | 40    | 75           | 1.25    | 3.00            |
| Freeman.....             | 18       | 40     | 90      | 30         | 40    | 75           | 1.25    | 3.00            |
| Lee's Favorite.....      | 18       | 40     | 90      | 30         | 40    | 75           | 1.25    | 3.00            |
| Twentieth Century.....   | 15       | 35     | 85      | 20         | 35    | 60           | 1.00    | 2.50            |
| State of Maine.....      | 15       | 35     | 85      | 20         | 35    | 60           | 1.00    | 2.50            |
| Carman No. 3.....        | 15       | 35     | 85      | 20         | 35    | 60           | 1.00    | 2.50            |
| King of Michigan.....    | 25       | 50     | 95      | 50         | 85    | 150          | 3.50    | 8.50            |
| California Russet.....   | 15       | 35     | 85      | 20         | 35    | 60           | 1.00    | 2.50            |
| New Craig.....           | 15       | 35     | 85      | 20         | 35    | 60           | 1.00    | 2.50            |
| Whitton's White Mam..... | 15       | 35     | 85      | 20         | 35    | 60           | 1.00    | 2.50            |

Seconds, while we have them, will be half price.

A barrel can be made up of as many varieties as you choose, and they will be at barrel prices if you have a whole barrel or more.

In addition to the kinds mentioned in the table, I planted as a test one peck each of several varieties, all highly recommended by our Ohio Experiment Station. They are mostly early or extra early. The prices will be the same as the earlies in the table. They are as follows: Admiral Dewey, Early Norwood, Early Fortune, Hammond's Sensation, Innes' Blight-proof Early Ohio, Baker's Extra Early, Quick Crop, and Northern Beauty. This last gave the highest yield (321 bushels per acre) of any potato, early or late, tested at the Ohio Experiment Station.

We hardly think it safe to ship potatoes after the first of December unless they are going somewhere south. In fact, we have successfully shipped potatoes all winter for many years past to the Southern States by packing them in dry sawdust and lining the barrels with heavy paper. We can ship as above, or we will keep them safely in our potato-cellars until next April, or later if you prefer. As our crop is very limited this year, if you want any of the above varieties you had better send in your order at once.

#### THE SEED AND PLANT BUSINESS OF THE A. I. ROOT CO.

After having sold vegetable seeds and plants for almost twenty years, I reluctantly announce that I am about to give it up. In fact, our seed department has already been sold to E. C. Green & Son, of this place. Many of you are somewhat acquainted with Mr. Green from his writings in GLEANINGS and other agricultural papers. He was for many years connected with the Ohio Experiment Station, and had charge of the department for testing new vegetables. He is also the originator of Burpee's tomato, Fordhook Fancy; also several varieties that are offered by Livingston. In fact, he has all his life been connected more or less with originating new plants and vegetables. The son is now in our employ, where he can have daily consultation with me in regard to getting hold of the minutiae of our seed business. I confess it makes me feel sad, however, to think of dropping the very pleasant acquaintance of those who have for years past entrusted us with their orders for seeds; but with the recent enlarging and development of our apicultural business we have found it absolutely necessary to drop all side

issues. We shall still hold on to seed potatoes and the seed business of all honey-plants and every thing pertaining to the production of honey; and I hope to see a nice garden to show our friends, where they can see all the new and old honey-plants growing. I also expect to visit greenhouses and gardens, and to continue to write up "High-pressure Gardening," and other gardening and fruit-growing, with other rural industries more or less connected with bee-keeping.

Permit me to add that, before this step was decided on, quite a lot of garden-seeds were grown expressly for us. By having them grown to order we are sure they are not only fresh, and true to name, but we are enabled to give very much lower prices than where we are compelled to buy our seeds from some other party.

Our successors, E. C. Green & Son, will have all of these specially grown seeds. Those who have purchased them from us during the past two or three years know how well they have turned out.

Just as we go to press we have received news that the National Association won its suit in San Antonio, Texas. Particulars will be given later.

## FIVE-ACRE IRRIGATED TRACTS.

Four acres of it set to **Alfalfa**, **Fruit-trees, or Grapes**, cultivated, fenced, and attended to by us. All for **\$3 per week for 5 years** (\$780), **less value of crops**. Best climate. Best soil. Best markets in U. S. Full particulars on application.

**OREGON LAND & WATER CO., Umatilla, Oregon.**



**THE CROWN** Bone Cutter  
for cutting green  
bones. For the poultryman. Best in the world.  
Lowest in price. Send for circular and testi-  
monials. Wilson Bros., EASTON, PA.

**20 THOROUGHBRED MINORCA COCKERELS.**  
Fine. Price 75¢ to \$1.00. Worth \$2.00 each.  
G. Routzahn, Biglerville, Pa.

**FOR SALE.**—Clover or buckwheat extracted honey, in 165-lb. kegs. Write for prices. Sample, 8c.  
C. B. HOWARD, Romulus, N. Y.

**FOR SALE.**—1000 lbs. No. 1 white comb, at 14¢, and 2000 lbs. No. 1 extracted, at 7½¢. W. D. SOPER,  
Route 3, Jackson, Mich.

**FOR SALE.**—Comb and extracted honey, buckwheat and amber. Write for prices. N. L. STEVENS,  
Route 6, Moravia, N. Y.

**FOR SALE.**—6000 lbs. choice ripe clover honey, new;  
60-lb. cans. ELIAS FOX, Hillsboro, Wis.

**FOR SALE.**—Fancy basswood and white-clover honey;  
60-lb. cans, 8c; 2 cans or more, 7½¢; bbls, 7½¢.  
E. R. PAHL & Co., 294 Broadway, Milwaukee, Wis.

**FOR SALE.**—Fancy and A No. 1 comb honey from  
alfalfa, in Danzenbaker 4 x 5 sections. Write for  
prices. WM. MORRIS, Route 1, Las Animas, Col.

**FOR SALE.**—White-clover extracted honey in 60-lb.  
cans, at 7½ cts. One can, 8 cts. No local checks receiv-  
ed. DR. C. L. PARKER, Sta. A, Syracuse, N. Y.

**FOR SALE.**—Extra fine white clover honey, both  
comb and extracted. Write for special price  
JOHN A. THORNTON, Rt. 1, Ursula, Ill.

**FOR SALE.**—Five cases extracted honey at \$8 40 per  
case. M. ISBELL, Norwich, N. Y.

## Wants and Exchange.

**WANTED.**—To sell bees and queens.  
O. H. HYATT, Shenandoah, Iowa.

**WANTED.**—To sell strawberry-plants. Catalog  
free. NORTH STAR PLANT FARM, Cokato, Minn.

**WANTED.**—To sell 75 colonies bees in good shape;  
will sell cheap. G. P. COOPER, Pikeville, Tenn.

**WANTED.**—To sell choice alfalfa honey, in 60-lb.  
cans. Prices quoted on application.  
W. P. MORLEY, Las Animas, Col.

**WANTED.**—You to read the adv't of ginseng on  
page 781, Sept. 1. For prices address  
A. P. YOUNG, Cave City, Ky.

**WANTED.**—Position by up-to-date apiarist, south  
preferred. R. J. SMITH,  
Street Road, Essex Co., N. Y.

**WANTED.**—A few thousand *basswood-trees* and bass-  
wood seed. Send lowest cash prices.  
OREGON LAND AND WATER CO., Umatilla, Oregon.

**WANTED.**—Names and addresses of those who want  
good books or sheet music. Ask for prices on  
what you want. M. T. WRIGHT, Medina, Ohio.

**WANTED.**—Your address on a postal for a little  
book on Queen-Rearing. Sent free.  
Address HENRY ALLEY, Wenham, Mass.

**WANTED.**—To buy quantity lots of choice white-  
clover comb and extracted honey. Price must be  
low. B. WALKER, Clyde, Ill.

**WANTED.**—The address of all who are still in need  
of cartons. QUIRIN-THE-QUEEN BREEDER,  
Parkertown, Ohio.

**WANTED.**—To sell 15,000 lbs. best white-clover ex-  
tracted honey in 60-lb. cans, at 8½ cts. per lb.  
WALTER S. PODUER,  
512 Mass. Ave., Indianapolis, Ind.

**WANTED.**—To exchange a two hundred-egg Relia-  
ble incubator, been used very little, for choice  
comb or extracted honey. CHAS. KOEPPEN,  
Fredericksburg, Va.

**WANTED.**—Bee keepers to try our printing, 100  
envelopes, note-heads, or statements. 40¢; 25¢,  
\$1.00. All postpaid. Can use queens and berry-  
plants in exchange. M. T. YOUNG, Girard, Pa.

**WANTED.**—To sell Angora kittens; perfect pets and  
beauties, 4 to 6 months old; colors, black, blue,  
orange, and gray. Prices: Males, \$5.00; females, \$4.00;  
pairs, \$8.00. Early orders secure best selection.  
J. W. DEANE, Maple Hill Farm, Freedom, Me.

**WANTED.**—To sell best type-writer for bee-keepers;  
practical, handy, low-priced. For exchange. Mann  
green-bone mill, good as new, cost \$16.00. Want 8-frame  
L. or Dovetailed hives or extracting supers for same;  
extracting-combs from healthy apiary; double shotgun,  
16 gauge. HARRY LATHROP, Monroe, Wis.

**WANTED.**—To sell 150 shallow extracting-frames,  
mostly filled with comb; one Wilson's Daisy  
(hand or power) green-bone cutter; one one-horse  
power speed jack, tumbling-rods, knuckles, belting,  
all complete; \$25 takes the outfit; one Odell typewriter,  
little used, good as new, \$10. Wanted, Vol. I. of  
Hoone's "Introduction to the Critical Study of the  
Holy Scriptures;" odd volumes of the "Practical  
Works and Sermons" of the Rev. Ralph Erskine, A.  
M.; back volumes of Zion's Watch Tower, 1879 to 1891.  
Address WM. FINDLAY, Basco, Ill.

**WANTED.**—To sell machinery for bee-hive factory,  
consisting of 10 h. p. horizontal boiler and 8 h. p.  
engine combined on skids. Four-piece section-planer  
saw, capacity 150 to 180 pieces per minute; dovetailing  
table, rip saw table, cut off table, turning-lathe, all of  
heavy maple frames; 22-in. surface-planer, 45 ft. turned  
2 in. shaft, hangers, pulleys, and belts, complete,  
cost \$850.00. All in good order, and been used but  
little. Will take \$450.00 (engine cost \$100.00) to make  
quick sale, as our truck farm takes all our time. Write  
for full particulars. F. & H. P. LANGDON,  
Maple Ridge Farm, Constable, N. Y.

# PAGE & LYON,

New London, Wisconsin.

MANUFACTURERS OF  
AND DEALERS IN . . .

## BEE-KEEPERS' SUPPLIES. . . .

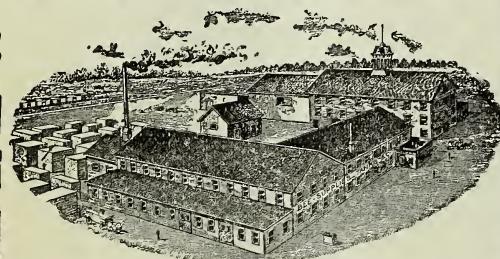
Send for Our Free New Illustrated  
Catalog and Price List. . . . .

# We Have Not Moved.

The government, recognizing the necessity of a great and growing business enterprise, for better mail service has given us a postoffice on our premises, which enables us to change mails with the passing trains instead of through the Wetumpka, Alabama, postoffice more than a mile distant. This gives us our mails about two hours earlier, and also one hour for making up outgoing mail. This will be particularly helpful in our queen business. We are now booking orders for Italian queens, Long-tongued and Leather-colored; both good.

J. M. Jenkins,  
Honeysuckle, Alabama.

Shipping-point and Money-order  
Office at Wetumpka, Alabama.



**Kretchmer M'f'g Company,**  
Box 60, Red Oak, Iowa.

# BEE- SUPPLIES!

Best-equipped factory in the West; carry a large stock and greatest variety of every thing needed in the apiary, assuring BEST goods at the LOWEST prices, and prompt shipment. We want every bee-keeper to have our FREE ILLUSTRATED CATALOG, and read description of Alternating Hives, Ferguson Supers. Write at once for catalog.

### Agencies.

Trester Supply Company, Lincoln, Neb.  
Shugart & Ouren, Council Bluffs, Iowa.  
Foster Lumber Company, Lamar, Colo.



BINGHAM SMOKER.

Dear Sir:—Inclosed find \$1.75. Please send one brass smoke-engine. I have one already. It is the best smoker I ever used. Truly yours,  
HENRY SCHMIDT, Hutto, Tex.

### MADE TO ORDER

# Bingham Brass Smokers.

Made of sheet brass, which does not rust or burn out; should last a lifetime. You need one, but they cost 25 cts. more than tin of the same size. The little open cut shows our brass hinge put on the three larger sizes. No wonder Bingham's four-inch smoke-engine goes without puffing, and does not drop ink drops. The perforated steel fire-grate has 381 holes to air the fuel and support the fire. Heavy tin smoke-engine, 4-inch stove, per mail, \$1.50; 3½-inch, \$1.10; 3-inch, \$1.00; 2½-inch, 90c; 2-inch, 65c. Bingham smokers are the originals, and have all the improvements, and have been the standard of excellence for 23 years. Only three larger ones brass.

T. F. Bingham, Farwell, Michigan.



## WEED FOUNDATION MACHINERY IN DENVER.

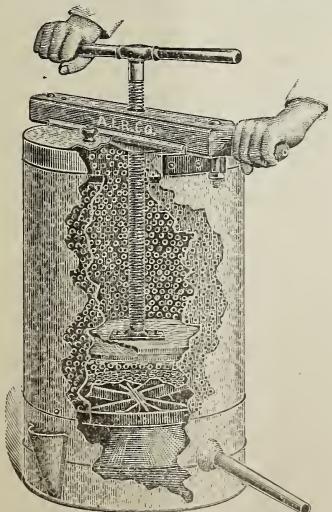
We have placed an outfit of Weed machinery for the manufacture of comb foundation with Henry F. Hagen, of Denver, Colo., and the foreman of our wax-room is now in Denver instructing Mr. Hagen in the operation of the machines. We commend Mr. Hagen to the bee-keepers and dealers in Colorado and vicinity, as he is in position to furnish them with foundation made by the Weed process. Mr. Hagen formerly kept bees in Rocky Ford, Colo., and handled supplies at that point to the extent of five carloads in one season. Having known him for years we can recommend him as reliable.

## TOBACCO DUST.

We have some ten barrels of tobacco dust made from ground stems as well as sweepings not so strong as the regular dust we have handled, but which will make an excellent fertilizer as well as insect destroyer in greenhouse work. It will have to be used more liberally than the regular dust to be effective. There is about 200 lbs. to a barrel. We offer it at \$2.00 a barrel to move it. This is about half to two-thirds the regular price, and it should be well worth this price.

## THE ROOT-GERMAN STEAM WAX-PRESS.

Many bee-keepers allow old combs and scraps of beeswax to collect, which, for lack of time and the proper utensils, are scattered or eaten up by moth-worms. A big item would be added to the year's profits by the timely rendering of said wax by an economical process. We believe the press illustrated below fills a long-felt want in rendering wax.



Our German machine is patterned after some of the best steam-extractors that have been used across the water, using the best features of all of them. Price \$14.00.

**SLOE PLUMS**

For description see Gleanings of Nov. 1, page 936. We can furnish trees or grafting-wood for spring delivery. If interested, write for description of varieties and prices.  
E. C. GREEN & SON, = Medina, Ohio.

## CONVENTION NOTICES.

The Minnesota Bee-keepers' Association will hold its annual meeting in Minneapolis, Dec. 2 and 3, at the First Unitarian Church, corner of Eighth St. and Mary Place midway between Hennepin and Nicollet Aves. Go in on the Mary Place side. Procure certificates from your local railroad agents when you purchase tickets, and those living in Minnesota can return for one-third fare; and we hope to secure the same for those living in Wisconsin, Iowa, and the Dakotas.

L. D. LEONARD, Sec'y.

The Fulton and Montgomery Co. Bee-keepers' Society will meet at the Central Hotel, Market St., Amsterdam, Dec. 22, at 10 A.M. This will be the regular business meeting of the society for electing officers, payment of annual dues, and other business that may come up. Annual dues \$1.00, which also includes a membership in the National Association.

West Galway, N. Y. T. I. DUGDALE, Sec'y.

## Free to Our Readers.

For many years we have advocated the use of cut green bone for poultry. To spread information on this subject we have arranged with the manufacturers of the Latest Model bone cutter to send their new book, "The Paying Hen," free to inquirers, who mention this paper. It's full of practical information on the subject. The manufacturers also write us that they will send one of their Latest Model bone cutters for ten days free trial, with a guarantee that it does better work and does it easier and faster than any other bone cutter. If you are not satisfied you may return it at their expense. The machine is a good one—easy-running and durable; it is used all over the world and the latest model embodies many improvements which add greatly to its convenience and ease of operation. Write to F. W. Mann & Co., Box 37, Milford, Mass.; tell them you are one of our readers and the book will reach you in a few days.



# SPRAY PUMPS

The Pump That Pumps SPRAY PUMPS Double-acting, Lift, Tank and Spray

**MYERS HAY TOOLS**

Glass Valve of all kinds. Write for Circulars and Prices.

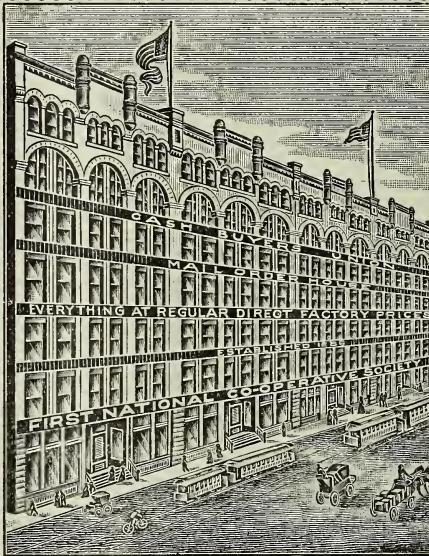
Myers Stayon Flexible Door Hangers with steel roller bearings, easy to push and to pull, cannot be thrown off the track—hence its name—"Stayon." Write for descriptive circulars and prices. Exclusive agency given to right party who will buy in quantity.

F. E. MYERS & BRO.  
Ashland, Ohio.

FOR SALE—20,000 lbs. white alfalfa honey, in 60-lb. cans, at 6c. f. o. b.  
GEO. D. MITCHELL, 329 Wash Ave., Ogden, Utah.

# Reduce Your Living Expenses 25 Per Cent.

It will be  
worth  
hundreds of  
dollars to  
you  
to carefully read  
and study this  
advertisement.



## Co-Operation

**DOES** reduce the cost of living; practical co-operation (as first introduced and successfully applied by us in America) is the solution of the problems of high prices and points the way to better living and cheaper living. Already it is successful.

### The Co-Operative System

enables the consumers—the users of goods—to practically own their own store; to purchase all their requirements direct from the producers without the intervention of the endless chain of middlemen (wholesalers, jobbers, retailers, agents, etc.) each one of whom makes a profit on every transaction and thereby increases the prices to you. Through Co-Operation you avoid paying profits to any one: the savings effected flow back into your pocket in the shape of lower prices and handsome dividends from the general trade, divided among our shareholders.

**We Have Several Thousand Shareholders** representing every state of the Union and nearly every civilized land; men and women from every

walk of life—all enthusiastic with the practical results of co-operation.

### We Want You to Join Us

and ask you to write for our complete "Book of Information" which we will send to any one free of all charges, on request. The book sets forth our wonderful plan of doing business direct by mail on the **Co-Operative Plan** with over half a million customers throughout the world; shows how we save them from 25 to 40 per cent. on everything they eat, wear, and use; gives statistics showing that the famous co-operative stores in England returned to their shareholders last year

**40 Per Cent. in Dividends on Their Capital** besides saving them an enormous amount of money on their purchases, which aggregated \$430,000,000. The book is a wonderful mine of business information, and is sent you free together with Bank and Mercantile references; a list of shareholders and scores of enthusiastic letters of endorsement from bankers, lawyers, manufacturers, merchants, mechanics, farmers, laborers, housewives, etc.

REFERENCES—Metropolitan Trust and Savings Bank, Chicago, Registrars; Messrs. Lord & Thomas, Advertising Agency; Dun's or Bradstreet's Mercantile Agency; any railroad or express company. The publishers of this or any newspaper or magazine. Any bank or reputable business house in Chicago.

Representatives Wanted. Write for Particulars.  
Established 1885. Re-Chartered 1903.

Capital FIVE MILLION DOLLARS.  
Nearly a Million Customers.

First National  
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It is understood that above will be sent to me free of all charges and that I am under no obligation whatsoever to subscribe.

# A Pointer

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for supplies of all kinds.

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Hives, sections, foundation,  
honey extractors, honey-  
cans, shipping-cases, etc.  
In fact, anything needed in  
the apiary. Let us hear  
from you. A lot of No. 1  
Home repairing outfit, 44  
pieces, \$1.00 each to close  
them out.

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HIGH HILL, - - MO.

## Hagen's Foundation.

HAVING installed a complete,  
up-to-date Weed Process  
Comb Foundation Machinery.  
I am prepared to furnish a high  
grade of comb foundation, and  
am prepared to supply the same  
in regular packages. Work up  
wax, or take wax in exchange  
for foundation. I guarantee  
satisfaction.

Highest Price Allowed for Beeswax.

H. F. Hagen,  
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Place your order now? We will make  
you special prices for early delivery.  
We are headquarters in Central California  
for Root's Cowan Extractors,  
Sections, Weed Foundation, Smokers,  
etc., as well as a full line of local-made  
supplies. We can give you prompt ser-  
vice. We solicit your patronage.



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Montana,  
Minnesota,  
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West'n Wisconsin

## BEE-KEEPERS

Our 33d annual catalog (for 1903, 92d edition) is  
now ready. Send for a copy at once. We have a full  
line of goods in stock, and can fill orders promptly.  
Save freight by ordering of the St. Paul branch.  
**Bees and Queens.** Orders booked now for  
spring delivery. **Honey and Wax.** We  
handle honey and wax. Write for particulars.

The A. I. ROOT COMPANY  
Northwestern Branch,  
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ST. PAUL, MINNESOTA  
H. G. Acklin, Manager.

# BEEKEEPERS Notice

We sell the Root goods here at Root's factory prices, which means the freight is paid to Des Moines, Iowa.

Immense stock and every variety of the best up-to-date goods now on hand packed prompt shipment.

Satisfaction is guaranteed on every order sent us. Thousands have been pleased with their goods from us. We can satisfy you.

Write for estimates, sending list of what you will need, and get our discounts for early orders. We will save you money. Send to-day for 1903 catalog.

**JOS. NYSEWANDER,**  
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26th Year

## Dadant's Foundation.

WHY DOES IT SELL SO WELL?—Because it has always given better satisfaction than any other. Because in 25 YEARS there have been no complaints, but thousands of compliments.

WE GUARANTEE SATISFACTION.—What more can anybody do? Beauty, purity, firmness, no sagging, no loss. PATENT WEED PROCESS OF SHEETING.

BEESWAX WANTED AT ALL TIMES.—Send name for our catalog, samples of foundation, and veil material. We sell the best veils, either cotton or silk.

LANGSTROTH ON THE HONEY-BEE, Revised. The classic in bee-literature \$1.20 by mail.

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## 5 Per Cent. Discount DURING THE MONTH OF NOVEMBER.

There is every evidence that there will be a heavy demand for goods the coming season; and if you defer placing your order until next February or March, you will not only lose your discount, but may have to wait for the filling of your order some weeks. Indeed, you can afford to borrow money, and get your goods now, thus having them all ready for next season's use.

### Every Month You Wait, It Will Cost You 1 Percent Per Month.

The styles of goods will be about the same for next season, so there is no use waiting for a new catalog. But remember prices have advanced, owing to the increased price of material; but if you Take Advantage of our Early-Order Discount you will not be paying any more for your goods than last year. A word to the wise is sufficient.

**The A. I. Root Co., Medina, O.**

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